

THOMAS W. EVANS



The Treatment of Pyorrhea Alveolaris with Succinimide of Mercury.

By GEO. H. REED, D.D.S., A.A.D. Surg., U. S. Navy.

Current dental literature for the past few years has abounded in technical and learned discussions relative to the cause and treatment of so-called pyorrhea alveolaris. Many and various have been the theories advanced, the experiments and discoveries made, and labored treatises produced and published, all directed toward the illumination of this dental mystery.

The recent announcement of Doctors Barrett and Smith, of the University of Pennsylvania, concerning the discovery of amœba in the pockets surrounding teeth affected with this malady, and the results obtained with emetine hydrochloride, has provoked a vast amount of renewed experimentation, which will doubtless be of material benefit to the dental profession and bring forth results of far-reaching importance in the treatment of this disease.

The success of Dr. Barton L. Wright, of the United States Navy, in the use of succinimide of mercury for diseases of vegetable parasitic origin by deep muscular injection, and the claims advanced by those adopting this method in the treatment of tubercular cases and other parasitic diseases, led me to a series of experiments with this drug in an effort to adapt the unquestioned efficacy of these mercurial injections to the treatment of pyorrhea.



The value of mercury in infections due to vegetable parasites lies in the fact that it stimulates the production of antibodies in the blood, and thereby retards the activities of these parasites. But its more pronounced effects are based on Ehrlich's theory that for every vegetable parasitic organism there is a chemical affinity, which, if found and injected into the host, will destroy the infecting organism and thereby cure the disease.

The endamœba discovered by Doctors Barrett and Smith in their researches of pyorrheal pockets, and which seems to have been accepted more or less generally as the specific cause of pyorrhea, is not a vegetable parasite. Yet mercury clears up these severe cases in which the amœba is undoubtedly present. This would seem to indicate that either the importance of the amœba has been overestimated or that mercury is equally as valuable as a treatment for the same as emetin hydrochloride.

Symptoms from Mercury Treatment. The first symptoms of its action are to be looked for in the mouth. If the use of mercury be persisted in, the gums become swollen, soft and spongy, bleeding on very slight abrasion. The exact action of mercury in pyorrhea is not clear, but aside from a probable direct action on the causative organism, there are the well-known tonic effects of the drug. From the fact that larger doses cause swelling of the gums, followed by the soft, spongy, bleeding gum, it is fair to assume that mercury produces a hyperæmia of the gums proportionate to the dose. If such is the case, we have added to the germicidal action and tonic effects a local hyperæmia, the benefits of which have been pointed out by Bier.

It has long been recognized that in the treatment of pyorrhea, local instrumentation alone is inefficient. So much depends on the physical condition of the patient that an attempt to correct the conditions of the mouth without a careful systemic medication is valueless where any degree of permanency is concerned. Therefore, in considering the adaptability of mercury as a cure, its well-known tonic effects make it worthy of special consideration.

Wright's Experiments. Surgeon Wright, in an article published in the *Medical Record* of July 10, 1914, announced that, based on the results of the experiments on mice made by Dr. Ehrlich, he commenced a series of experiments in the treatment of tuberculosis, the results of which convinced him that mercury is the chemical affinity for the tubercle bacillus, and if for the tubercle bacillus, why not for the entire group of vegetable parasites?

**The Author's
Experiments.**

With this idea in mind, and with the results of Dr. Wright's experiments before me, I selected several advanced cases of pyorrhea from the navy personnel, and under my direction mercury was injected by P. A. Surgeon Matthew H. Ames, U. S. N., at my office in the Boston Navy Yard.

The initial injection in the first instance was seven-fifths grains, made after a thorough instrumentation of the teeth. This was followed by an injection of one grain after an interval of three days, and by three-fifths grain three days later. The patient evinced no ill effect from the treatment, except a certain soreness in the gluteal muscles, where the injection was made, which induced me to have him placed on the sick list for observation.

All discharge of pus ceased after the first injection. None could be produced by careful and firm pressure over the infected teeth. The gums were still tender, particularly at the free margins. After the second injection, the patient announced that his gums "felt good"; there was little or no tenderness; the teeth were not sensitive to pressure, and the tissues had assumed a more normal appearance. Two days after the third injection the teeth were noticeably firmer in their sockets; the patient could masticate ordinary coarse foods with comfort, and informed me that his teeth had ceased to bother him. Two weeks later the mouth presented a normal healthy appearance, with, of course, some recession of the gums.

In order to demonstrate the efficacy of the drug as a remedy for local conditions in pyorrhea, without laying it open to criticism on the ground that the prescribed local instrumentation might be the chief factor in connecting these conditions, I injected the usual dosage in the case of one man in particular, whose mouth presented a typical advanced case of pyorrhea, with a large quantity of pus exuding from around the necks of the teeth, which were so sore that they could not be occluded without pain. The injection was made at 10 A. M., and at 3 P. M. on the following day the patient came to the office for the express purpose of informing me that he could close his mouth without pain for the first time in nearly a year.

**Technique of
Using Mercury.**

The technique for these operations as performed in this office is simple and occupies but a few moments' time. The chair is run up to the limit of its lifting range and the back dropped as far as it will go. The head-rest is reversed and lengthened, and the patient instructed to stand bent forward so that the abdomen rests on the chair back, with the head-rest projecting between the legs.



The field of operation is sterilized with tincture of iodine, and the injection made in the fleshy part of either buttock, care being taken to avoid contact with the bone. The injection is into the muscles of the buttock, as there is no structure that can be injured; the only precaution to be taken is that in case the needle goes in so far as the bone it should be withdrawn about one inch before injecting the solution.

The syringe should be of glass, having a capacity of about fifty minims, distilled water being used, and the drug, which is obtainable in tablet form, dissolved in the syringe. The needle used is the one in common use for deep muscular injection, being two inches long, and should be inserted to its full length before pressure is applied to the piston. Should a syringe of lesser capacity be used and two injections be necessary, the needle should be detached from the barrel and its point be directed upward in order to prevent the injected solution from escaping. Everything should be sterile and the ordinary antiseptic precaution should be observed.

The drug is quickly absorbed into the system, the action commencing almost immediately after injection and continuing for about twenty-four hours. The patient will be conscious of a knobby, ball-like bunch, persisting for awhile at the point of injection. If symptoms of mercurialism, manifested in profuse salivation, the gums being hyperæmic and swollen, fetor of the breath, etc., are observed, the treatment should be suspended temporarily and resumed after an interval of about two weeks, or after corrective measures have had their effect.

In connection with these injections of succinimide of mercury, I have used several mouth washes, but have obtained the best results by using dioxxygen up to the time of the second injection, and then substituting a wash having eight grains of zinc chloride and a drachm of myrrh to the ounce. I have also experimented with a mouth wash containing ipecac, using about two drops in a small quantity of water, this wash being advocated by those using emetine hydrochloride treatment.

Since this article was written, I have communicated with Dr. Paul G. White, Acting Assistant Dental Surgeon, U. S. N., at the Portsmouth Navy Yard, who informs me that he has successfully treated many cases of pyorrhea in conjunction with Dr. Wright, and to Dr. White all credit for the mercurial treatment is naturally due.



Dedication of the Evans Dental Institute.

The sixth epochal period has been writ in dental history.

The first was the founding of the first dental society, the American Society of Dental Surgeons.

The second was the appearance of the first dental journal, the *American Journal of Dental Science*.

The third was the founding of the first dental college, the Baltimore College of Dental Surgery.

The fourth was the discovery of anesthesia by Horace Wells.

The fifth was the construction and endowment of the Forsyth Dental Infirmary for Children by the philanthropists, the Forsyth brothers.

The sixth was the erection and endowment of the Evans Museum and Dental Institute.

It seems quite fitting that the dedicatory exercises of this last named institution should have occurred on the anniversary of Washington's Birthday, more especially as this wonderful gift to the dental profession comes as a legacy of an American-born dentist practicing in a foreign country.

The building is a marvel of architecture, and the last word in dental equipment, and being as it is a monument of the life work of one dentist, it must ever stand as an inspiration, not alone to the students who may acquire their education within its walls, but to all others who may have the opportunity of visiting and admiring this wonderful structure.

The procession was the most impressive one that has ever appeared on the campus, and the dedication ceremonies occurred in the large clinic room of the Institute. Two thousand people witnessed the conferring of honorary degrees upon eminent surgeons and the presentation of the keys of the building by the architect, Mr. Windrim, to ex-Mayor John Weaver, president of the Institute.

“It is my great privilege to hand to you the keys
Mr. Windrim. of this large institute building, designed according to the schedule of requirements, prepared by Dr. Edward C. Kirk, and dedicated for all time to be the home of study and learning, and also to give acknowledgment to the great intelligence and industry exercised by the superintendent of construction, Mr. W. R. Allen, and also to thank the contractors who erected this building, Mr. Edward R. Hall and Mr. John H. Pomeroy.”

Mr. Weaver in turn presented them to Provost Smith as head of the University.



EDWARD C. KIRK, D.D.S., Sc.D., LL.D.,
Dean of the School of Dentistry



Provost Smith. "To those who have contributed in any way to this affiliation of the Evans Museum and the Dental School of the University, the corporation of the University offers sincere thanks.

May good—and only good—be the result.

May the benefits be reaped by mankind to the North, the South, the East and West—by mankind everywhere!"

Of the three foreign scientists who received honorary degrees, Dr. John Howard Mummery, of London, was the only one able to be present.

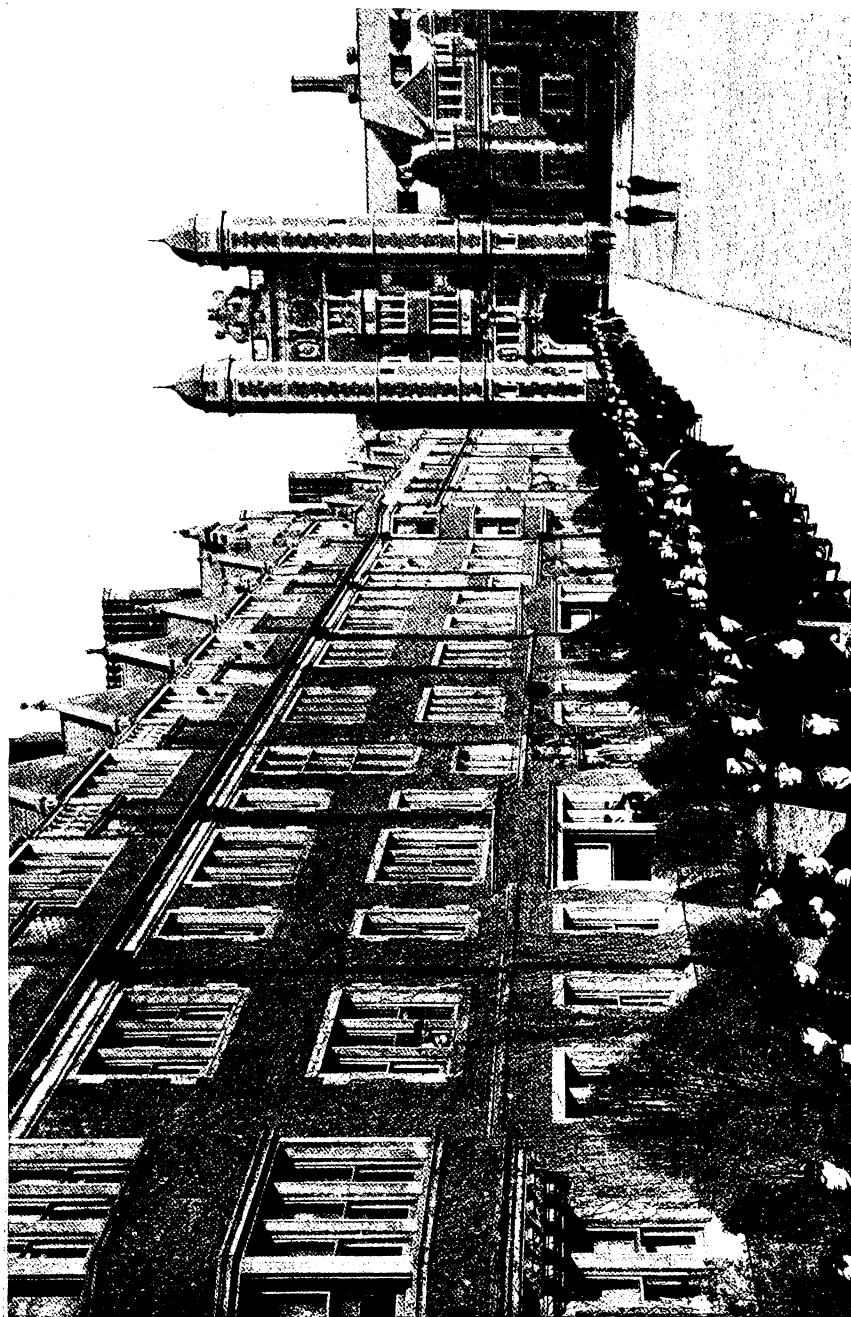
Degrees Conferred.

The honorary degree of Doctor of Laws was conferred on Dean Edward C. Kirk and Dr. Edwin F. Darby; the degree of Master of Science in Architecture on John T. Windrim, and upon the following eight men the degree of Doctor of Science: William Simon, Truman William Brophy, Edward Hartley Angle, Eugene Solomon Talbot, John Howard Mummery, Edouard Charles Godon, Wilhelm Dieck, Greene Vardiman Black. The degrees were conferred in the following order, each candidate being escorted in front of the Provost by two sponsors. Mr. Windrim was escorted by Charles L. Borie and George H. Norris; William Simon by John Marshall and A. P. Lee; Truman W. Brophy by Matthew H. Cryer and Robert Ivy; Edward H. Angle by Charles R. Turner and James G. Lane; Eugene Solomon Talbot by Louis Meisburger, of Buffalo, N. Y., and Edward G. Link, of Rochester; John Howard Mummery by Arthur Hopewell-Smith and Sydney A. Sands. The degree to Edouard Charles Godon, of France, was conferred upon him in absentia. He was represented by a member of the French Embassy, who was escorted by H. B. Matteossian and Henry L. Weber, of Paris. Wilhelm Dieck also received his degree in absentia, and was represented by a member of the German Embassy, who was escorted by Herman Prinz and Wilson Zerfing. Greene V. Black was escorted by Nathaniel Gildersleeve and M. T. Barrett; Edwin T. Darby by Joseph W. Noble, of Hong Kong, China, and C. C. Voelker, of Brooklyn, N. Y.; Edward C. Kirk by Howard S. Seip, of Allentown, Pa., and V. S. Jones, of Bethlehem, Pa.

The Evolution of Dentistry.

Address of Edward C. Kirk, D.D.S., Sc.D., LL.D., Dean of The School of Dentistry.

We are met here to-day to signalize a new epoch in the educational development of a specialized field of the science and art of healing, which, as an organized professional activity, has just completed the seventy-fifth year of its existence. The growth of dentistry, considered from the view-



PROCESSION THROUGH UNIVERSITY QUADRANGLE

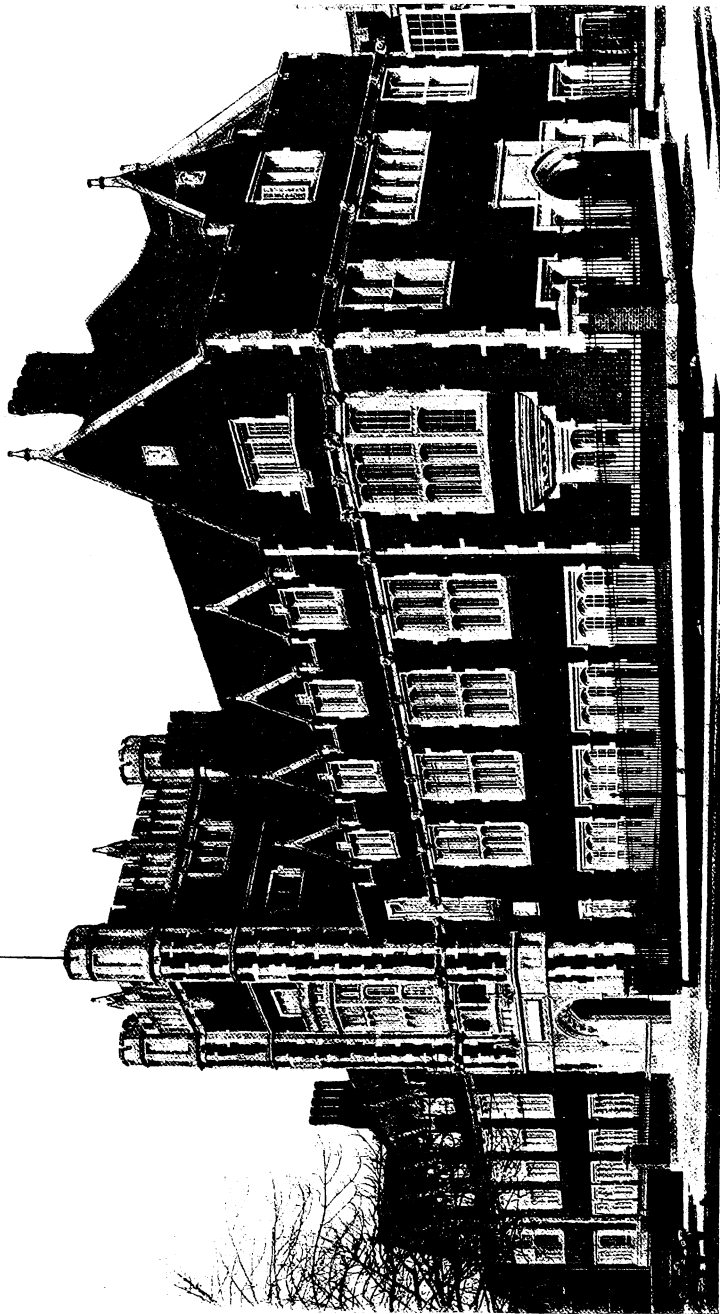
point of its formative forces, runs parallel in all essential features with the evolution of the healing art in general.

**Dentistry
an Ancient
Art.**

There is every reason to believe that among the physical ailments which from the earliest times have impelled mankind to seek relief at the hands of the healer, the distresses arising from defective teeth have demanded attention. The treatment of dental diseases may, therefore, be regarded as coeval with the first efforts of primitive man to find relief from his other bodily infirmities. Evidences of the existence of a large body of knowledge concerning clearly recognized dental disorders with suggestions for their treatment have been traced back to a period as early as the first Egyptian dynasty, about thirty-seven centuries before the Christian era. It is highly probable that in that remote period the treatment of diseases of the teeth was carried on by the healer or physician of the time as a part of his general practice, but Herodotus, who wrote about 450 B. C., states that at his time there were in Egypt a number of physicians who, instead of practicing general medicine, devoted themselves to specialties, some treating diseases of the eye, others diseases of the teeth, others diseases of the head, abdomen, etc., from which statement it appears that in the fifth century before Christ dentistry was practiced in Egypt as a distinct specialty. Dentistry as a specialty was practiced at a remote period by the Etruscans, who carried the art to Rome. The practice of dentistry was so general in the fifth century B. C., that the ancient Roman law of the Twelve Tables contains a provision forbidding the burial of any gold with the body of the deceased person other than that which is used to bind the teeth together. If the statement of Pliny may be relied upon, the Romans had no physicians for several centuries, and that the first to practice there was one Archagathus, a priest, who came to Rome in the sixth century after the founding of the city, an epoch some centuries after the promulgation of the law of the Twelve Tables. Pliny's statement might suggest that the need for the physician did not arise among the Romans until after their teeth had become defective, a suggestion the soundness of which modern investigation is tending more and more to establish.

The high state of development of dental art in Rome about the beginning of the Christian era is clearly indicated by a number of writers of the time, among others, Horace, who in one of his satires depicts two courtesans, Sagana and Canidia, the former as wearing a wig and the latter false teeth; also Martial, in a number of his epigrams, makes allusion to artificial teeth; thus in one of his poems he speaks of a certain courtesan as having teeth of bone and ivory; in another epigram he praises the beauty of Lecania's teeth, "white as the snow," but further

Items of Interest



EVANS DENTAL INSTITUTE



on he remarks that "they are not her own." And to another he says, "Your teeth, as your gown, you nightly remove." That these allusions to early dental art by the writers quoted are wholly justified has been comparatively recently demonstrated by the discovery in ancient Etruscan tombs of actual specimens of the dental art of the period.

I have drawn attention to these early historic records in order to emphasize the fact that the art of dentistry is very ancient, in so far as it had to do with the mechanical restoration of lost teeth by artificial substitutes and other forms of mechanical treatment of defective dentures. In this early epoch these restorative mechanical operations upon the teeth were performed by artisans or mechanics having no connection whatever with medicine or surgery. In the course of time it is highly probable that these operators upon the teeth were called upon to perform minor surgical operations and to treat certain diseases of the teeth; indeed, Martial, in one of his epigrams, mentions one of these ancient specialists by name. He says: "Castellius pulls and treats diseased teeth." On the other hand, diseases of the teeth themselves and the parts associated with the teeth have received the attention of physicians from the earliest time. According to tradition, Esculapius, who flourished some thirteen centuries before the Christian era, invented a number of curative measures for diseases of the teeth, and tradition accords to him the invention of the forceps for the extraction of teeth. Hippocrates, who wrote about 400 B. C., records in his work many observations relating to diseases of the gums and their treatment, but none of the early medical writers makes any reference to constructive dental art, which, until comparatively recent times, appears to have been a distinct specialty practiced only by those who were mechanics or artisans having possibly a very superficial acquaintance with the simpler disease conditions which affected the teeth upon which they operated. Their art was addressed simply to the restoration of defective conditions in the masticating mechanism by mechanical means.

It will thus be seen that dentistry has had a dual origin. Its problems in pathology have kept it in constant and vital relation with medicine, while its requirements in the restorative phase of its art have necessitated its relations with the craft of the artisan, and it is this latter feature so essential to its practice that has, in the course of its evolution, developed dentistry as a distinct profession, having a separate system of preparatory education, a special literature and a professional organization independent of medicine.

Throughout the long period of ignorance and superstition preceding the organization of the dental profession upon an independent educational basis, humanity was dependent for relief from its dental ills upon two



ENTRANCE GATE AND CENTRAL TOWER

types of practitioners: first, those who were medical men without knowledge or skill in the handicraft necessary to the successful performance of constructive restorative operations upon the teeth, and, secondly, artisans or mechanics more or less skilled in the filling and mechanical treatment of the teeth and in the construction of artificial dental substitutes. This, in general, was the status of affairs in dentistry up to the fifth decade in the nineteenth century.

**American Dentistry
Imported from
Europe.**

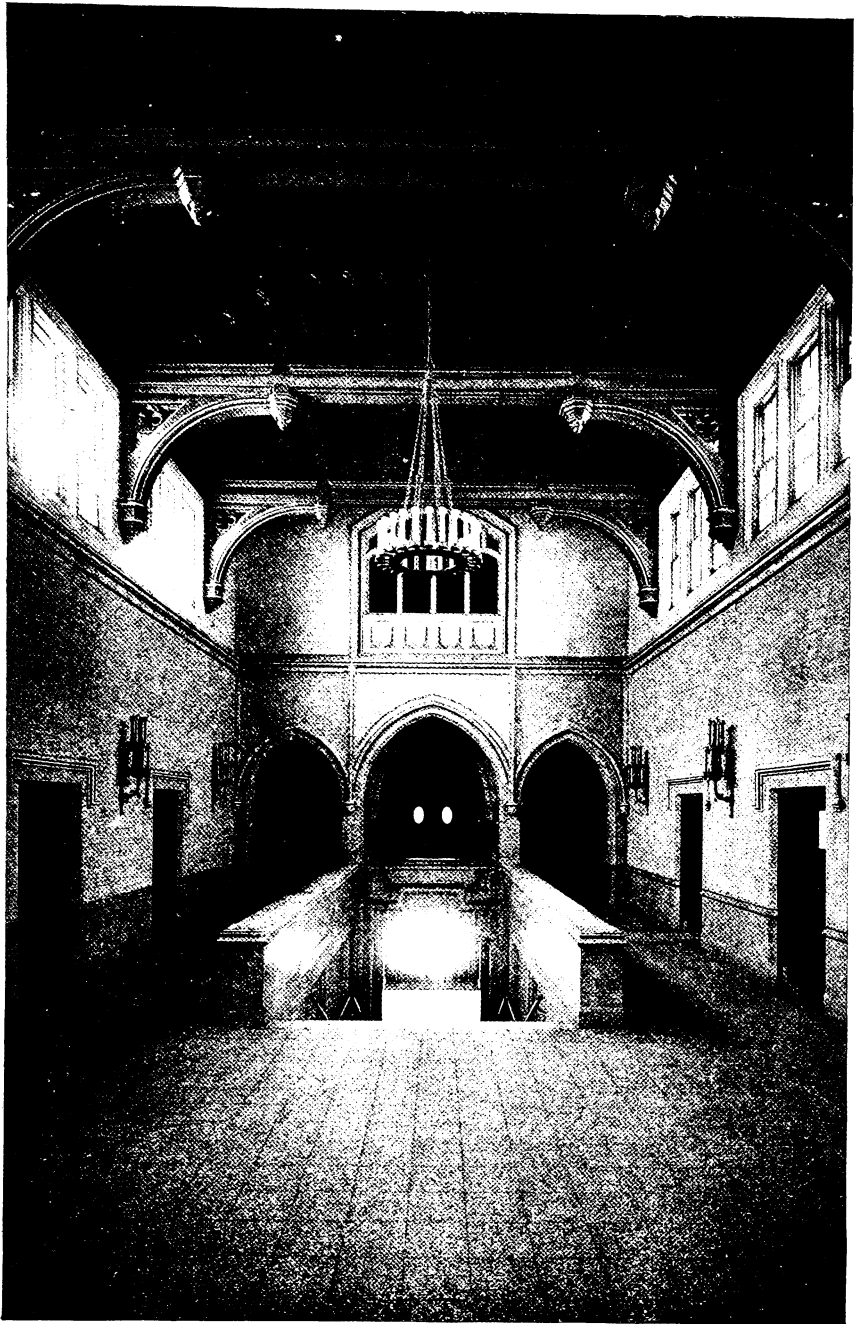
What we are accustomed to refer to with some pride as "American dentistry" is an importation of European dentistry, so far as its origins are concerned. Soon after the American colonies began to grow in strength and proportions sufficient to offer an attractive field for dental practice, a number of peripatetic dental practitioners from Europe, with a view to bettering their fortunes, visited the colonies. In 1780 there came to America Joseph Lemaire, a French dentist, and James Gardette, also a French dentist holding a surgeon's commission in the French Navy. Both of these men were attached to the French Auxiliary forces under Count Rochambeau, and when the French forces were in winter quarters at Newport, during the last winter of the Revolutionary War, Lemaire and Gardette instructed in their art Josiah Flagg, a young officer in the Colonial Army, who, after the close of the Revolution, opened an office for the practice of dentistry in Boston. Thus it was that the dental art of France, which, at that time had reached a comparatively high degree of development, was transplanted to America, and Josiah Flagg, the pupil of the French dentist, Lemaire, has justly come to be regarded as the first dentist who received his education upon American soil. Both Lemaire and Gardette practiced for some time in Philadelphia, Gardette remaining in practice here until 1829, when he returned to France.

**Profession of Dentistry
Created in
America.**

While the beginnings of dentistry in America were transplantations from both England and France, it is to the latter country that we are primarily indebted for the impulse which has created that distinctive system of practice based upon a specialized educational plan which later developed into the dental profession of modern times.

A distinguishing feature of dentistry during the first quarter of the nineteenth century was the commercial character of its ideal. Its proudest achievement was the ingenuity and manipulative skill of its craftsmanship both in the laboratory and the operating room.

The entire practice of dental art was upon a purely empirical basis, no means for systematic dental education existed, there was no dental



STAIRWAY AND UPPER HALL

literature worthy the name and no professional organization. Practitioners of the art jealously guarded their modes of procedure as trade secrets are guarded at the present time. Professional intercourse in a general sense was not possible, owing to the jealousy which existed among practitioners, and because of the prevalent spirit of commercialism and the ignorance of the general public concerning dental matters, much charlatanism and quackery prevailed. That a spirit of commercialism should dominate dental practice in its earlier days was inevitable from the very nature of its service. The dental craftsman sold the product of his handiwork to the patient for a price. The character of the material employed and the amount of labor involved in the construction of the artificial restoration were the determining factors as to the size of the fee which the operator charged, and, so long as the remuneration of the operator was determined by the value of the material supplied and the amount of labor expended by him in its construction, and so long as the dentist was influenced by a consideration of these material values, he was necessarily dominated by a commercial ideal. It was precisely this atmosphere of commercialism prevalent among the earlier dentists that gave to their calling the characteristics of a manufacturing business, and subordinated, if it did not to a large degree obliterate, the professional ideal.

**Hayden
and
Harris.**

It was into such an atmosphere in 1839 that Horace H. Hayden and Chapin A. Harris, two men whose benefaction to dentistry easily entitle them to the highest place of honor in the Vallhalla of our immortals, came as the propagandists of a new gospel of professionalism in dentistry, which broke the shackles of commercialism and infused the spirit of professionalism into dental practice that is to-day bearing abundant fruit, and has given to dentistry an established place among the recognized professional callings.

By their united activities, they established in 1839 the Baltimore College of Dental Surgery, the first dental college in the world, the *American Journal of Dental Science*, the first dental periodical in the world, and the American Association of Dental Surgeons, the first national association of dentists in the world.

The College of Hayden and Harris, the mother of dental colleges, still an active and important factor in dental education, was successful from the start, and so manifestly did it reflect an existing need, that similar institutions were founded from time to time until, at the present, there are upwards of sixty dental educational institutions in the United States, each offering a curriculum of study which, in principle, is that devised by Hayden and Harris in 1839. The founders of the first dental college had seen with prophetic vision that in the future development of



OPERATING INFIRMARY



BACTERIOLOGICAL LABORATORY

medical science and art the mere increase in bulk of medical knowledge must ultimately divide the teaching and practice of medicine into separate specialties. Failing in their efforts to induce the authorities of the University of Maryland to provide facilities for the education of dentists, and confident of the reality of the need for dental educational facilities, they were compelled to accept the only alternative and establish dental education upon an independent and autonomous basis. Doubt has been frequently expressed as to the wisdom of this course; nevertheless, the growth of dentistry during the seventy-five years of its professional existence has furnished a sufficient justification of the wisdom of the pioneers who founded the first independent dental school. On the other hand, the growth of medical science in general, and the essential part which medical science played in the dental curriculum, made it necessary to include among the studies that must be pursued by the prospective dental practitioner practically all of those subjects of the medical curriculum which are fundamental to the whole science and art of healing. It has come to be necessary for the properly equipped dental practitioner to be well grounded in a knowledge of the structure, the composition and the functions of the human body both in health and disease, and to have an adequate knowledge of the means of therapeutic treatment of all of those diseases of the mouth and the associated parts which come within his province to treat. Moreover, the properly trained dentist must have a practical acquaintance with the surgery of the mouth and jaws, and he must be competent to do surgical operations that come within the field of his activities with intelligence and skill.

**Alliance
of Dentistry
and Medicine.**

In the evolution of both medicine and dentistry, so close have their relationships become that a considerable number of the medical schools of the United States and elsewhere have organized departments for the training of dental students who receive their instruction in certain of the medical branches concurrently with medical students. The great importance of dental education in 1867 led to its inclusion under the fostering care of the higher seats of learning. The pioneer in this respect was Harvard University, followed by the University of Michigan in 1875, and the University of Pennsylvania in 1878. The inclusion of the dental curriculum in the university plan of education is an important epoch in the history of dental professional education, in that it is an official recognition by the higher institutions of learning of the wisdom of the pioneers in dental education in establishing the dental profession upon a distinct and independent basis.

During the past twenty-five years the remarkable development which has taken place in medical science, particularly the flood of light which

has been thrown upon the causation of disease by the epoch-making discoveries of Koch, Pasteur and the group of scientists who have created the science of bacteriology, have brought forward problems in dental practice of the utmost importance, not only with regard to disease conditions of the mouth, but their connection with disease conditions in remote parts of the body. It is now a well-established fact that the mouth is the portal of entry for the majority of disease-producing germs that are the exciters of disease conditions in the body, and that an unclean mouth is an infected mouth which is a constant menace to the health of the individual. It is also well established that many obscure nervous disorders, cases of arrested growth, interferences with mental development, malnutrition, inflammatory lesions of the joints, valvular heart lesions, and many other bodily disorders, have their heretofore unsuspected origins in the unclean or diseased mouth. It has come within the province of dentistry to study these problems and not only to undertake their treatment, but by securing the maintenance of the mouth in a hygienic condition to prevent the occurrence of these disorders which have a mouth origin, and are, therefore, strictly within the category of preventable diseases.

It will be readily seen from what I have said that the scope of dental practice to-day is larger and more complex than it was seventy-five years ago, when the dental profession was first organized. It is for the purpose of preparing men to meet the conditions imposed by modern dental practice in all of its aspects that the educational plan, building and equipment of The Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania, has been provided by a co-operative affiliation with the Board of Trustees of the respective institutions. "An arrangement which will secure to the students to be educated therein more fully and adequately than would otherwise be possible the advantages Dr. Evans intended to confer upon them."

The late Dr. Thomas W. Evans, of Paris, was best known in a public sense by reason of some of the more dramatic and outstanding incidents of his public life. His friendship with the late Emperor Napoleon III, his success in amassing a large fortune, his professional relations with European rulers which gave him access to nearly every court in Europe, the assistance which he rendered the Empress Eugenie by rescuing her from the mob in the Tuilleries and enabling her to escape to England during the trying times of the Commune in 1871, are well known. These public acts of his career have served to obscure the importance of his position and character as a representative practitioner of dentistry. Of humble origin, with no greater prospect of success before him than those

which apparently await any recent graduate in dentistry, he rapidly rose to a position of commanding influence as the result of his own efforts and indomitable perseverance, but notwithstanding his abundant material success, he never in all relations of life failed to acknowledge his allegiance to his profession, nor to use his efforts and influence for the elevation of its standards and to win for it that recognition from others of which he deemed it to be eminently worthy. In all that pertained to the art of dentistry he was ingenious and resourceful, and he was constantly on the alert for the discovery of useful ideas applicable to the exigencies of his practice.

The breadth and liberality of his mind in professional matters was a marked characteristic, and throughout his long and active career he emphasized both by his life and his writings the ideal of professionalism which was the governing motive in his work. He had long planned a benefaction for the profession that he loved, and in order to make it effective he provided in his last will and testament for the erection, at Fortieth and Spruce Streets, in Philadelphia, on the lot where formerly stood the house once occupied by his parents, of a dental educational institution, "to be conducted as such institutions of learning are now conducted in Philadelphia, and not inferior to any already established, fire and burglar proof and of artistic and refined beauty."

Fifteen years elapsed after the death of Dr. Evans before the benefaction of dentistry which his will provided could be materialized. What seemed to be interminable litigation over the disposition of his several bequests threatened for a time to defeat the carrying out of the major purpose of his will. Through the self-sacrificing patriotic devotion of the Hon. John Weaver, then Chief Magistrate of Philadelphia, and the gentlemen associated with him as members of the corporation legally chartered and empowered by the State of Pennsylvania to take over and administer the trust imposed by the will of Dr. Evans, and with the intelligent and unremitting help of Mr. Joseph W. Catherine and Mr. G. Heide Norris, the eminent legal counsel of the corporation, a settlement of the estate was finally effected, whereby the residue thereof became available for the carrying out of the benefaction of Dr. Evans to the dental profession through its educational activities. The residue of the estate representing material resources at the disposition of the corporation being insufficient to fully and effectively carry out the wishes of Dr. Evans as expressed in his will, a co-operative affiliation was arranged with the Trustees of the University of Pennsylvania whereby the resources of both institutions are made available for the end in view; an arrangement practically possible from the fact that the aims of both corporations with respect to dental education are identical.



**Evans
Dental
Institute.**

The magnificent structure, with its unequalled equipment, which to-day we dedicate to the uses of dental education, is the materialization of the specific request of Dr. Evans that the institution for which he made provision should be housed in a building "fire and burglar proof and of artistic and refined beauty." In its organization ample provision has been made for the three fundamental activities necessary to dental educational progress. First, the training of undergraduates in preparation for professional practice. Second, facilities for post-graduate instruction in the later developments of dental science and art, and third, opportunity and facilities for the prosecution of original scientific investigation in matters pertaining to dentistry. All of which is made practically accessible to any and all who are competent to take advantage thereof and profit thereby.

The science and art of dentistry has long since passed the stage of development where its ministrations consisted wholly of mechanical restorations. It has grasped and fully comprehends the ideal of the redemptive and restorative character of its work and to-day is keenly alive to the new responsibility which is confronting it as an important factor in the prevention of general bodily disease.

In the creation of this new centre of dental educational activity, its faculty realizes that the weight of responsibility imposed upon them bears a direct relation to the opportunity which the benefaction of Dr. Evans has made possible, the responsibility, as he himself expressed it, of "placing our profession on more commanding ground and making it better serve the generation in which we live." It is the re-dedication of the educational staff of the institute to that ideal, which must be regarded as not the least important factor in the dedication of this new building and the benefaction which it represents.

In view of the exalted purpose of him whose belief in the usefulness of his profession to humanity impelled him to make provision for this splendid benefaction; in view of the singleness of purpose with which all who have been concerned in working for its realization have sympathetically labored to a common end, and in view of the high ideals of those who constitute its teaching force may we not confidently expect that the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania, shall stand forever in the City of Philadelphia as the fruitful source of training of those who shall go forth from her walls equipped to intelligently combat the ills of humanity that fall within the province of dentistry to treat and to prevent. Such being her exalted mission, then so long as we are all loyal to the ideals



which she represents, the Evans Institute will be in a very real sense like that tree seen in the heavenly city of the vision of St. John the Divine:

"In the midst of the street of it and on either side of the river was there a tree of life which bare twelve manner of fruits and yielded her fruit every month; and the leaves of the tree were for the healing of the nations."

Address by Mr. J. Howard Mummery, M.R.C.S., L.D.S., of London, England.

Mr. Provost, President Weaver, Ladies and Gentlemen:

I regard it as a happy coincidence that this celebration falls on the anniversary of the birthday of George Washington, for as an Englishman I deem it a privilege to honor the memory and character of a man whom we have to remember was a British subject, one whom, though we may have differed with him in opinion, we must nevertheless respect for his honesty of purpose, his splendid attributes of character and his high attainments, which have endeared him not only to you, but to the world at large. I esteem it a great privilege to be present at this commemoration, and to convey on the part of the profession of Great Britain our warm greetings to our colleagues of the United States and our sympathetic appreciation of their noble endeavors and great achievement. In the pursuit of dental science, the methods adopted in America and in England have been perhaps a little different. Taken as a whole, it may perhaps be said with truth that while Great Britain has given more attention to scientific problems connected with the profession, the United States has been foremost in the application of scientific truths to practical purposes. While we think that America owes us something for the stimulus which we have given to questions of pure science, we certainly owe her a debt for the numerous improvements in technic of which we have fully availed ourselves.

Anesthesia. No civilized nation will ever forget the greatest debt of all which we owe to America, the first practical application of anesthetics. The discovery of anesthesia is a discovery which we can confidently say has done more for the relief of mental and physical sufferings, has been richer in benefit to humanity than any other human achievement. When we think of the awful dread which oppressed all those who met with a serious accident or suffered from a surgical disease, and the terrible agony of a capital operation in former times, we cannot be too grateful to the nation which removed this nightmare from the world. That memorable meeting in Paris, when the monument to Horace Wells was unveiled, had, we think, more significance to humanity than similar, much greater celebrations in



honor of heroes whose valor in war has won the recognition of the world.

W. D. Miller. The appreciation of our obligation to American dentists would be altogether incomplete without specific reference to the great and important results to the profession on the scientific side from the life work of that great man, Willoughby Dayton Miller, a graduate of your institution of the class of 1879, a man whose name is held in reverence by the profession throughout the whole of the civilized world. I may be perhaps permitted to say that he was the most valued and dearest professional friend I ever had. His delightful enthusiasm was a stimulus of the greatest value, and I owe him a debt of gratitude never to be forgotten; his suggestions and help in my own work have been invaluable. His characteristic American enthusiasm and quickwittedness, combined with the thoroughness and accuracy of the methods which he adopted from the country in which he took up his abode, made a combination which succeeded in bringing him into the first rank of scientific investigators.

It has been recently said that, after all, scientific investigation has led only to the perfection of means for destruction of human life, but this is only another of the fallacies that have been begotten of our present disturbed situation, for it is demonstrable that the practical applications of science have actually saved more human lives than the total number which have been lost in all of the wars of the centuries.

Science, after all, as Professor Huxley says, "is simply trained and organized common sense." As distinguished from results obtained solely by experience, the causes leading up to such results being but little understood or distinguished, our outlook for the ultimate success of the profession of dentistry is dependent upon the recognition of this principle. From the point of view of the dental profession, it is a matter of rejoicing that this great institute is to be administered in this spirit; that its governing motive and mission is to translate the unknown into terms of the known; to be the creator as well as the transmitter of dental knowledge, and to make the scientific in dentistry the foundation of the practical.

**Evans
Dental
Institute.**

By reason of the happy affiliation of the resources of the Evans Institute with the educational activities of the University of Pennsylvania, there has been made possible a practical realization of the desire of Dr. Evans to confer a benefaction upon his "beloved profession," as he expressed it, more fully and adequately than would have been possible under any other circumstances of which we can conceive.

In this institution the profession has, for the first time, both in material and in its organization, secured ample provision in connection with its educational activities for the prosecution of investigation in pure science. Science does not work with utilitarian ends in view. It is pursued without reference to results. As Professor Huxley says, "The physical philosopher, in the course of his investigations, lights upon something which proves to be of practical value. Great is the rejoicing of those who are benefited thereby, and, for the moment, science is the Diana of all the craftsmen. But even while the cries of jubilation resound, and this flotsam and jetsam of the tide of investigation is being turned into the wages of workmen and the wealth of capitalists, the crest of the wave of scientific investigation is far away on its course over the illimitable ocean of the unknown."

Address by William Simon, of the Baltimore College of Dental Surgery.

Mr. Provost, Ladies and Gentlemen:

To me has been assigned the task of speaking briefly on the subject of "The Birth of Dentistry as a Profession." It would not be justifiable to discuss similarly the birth of medicine or of any other profession, because they were not born; they were the result of an evolution extending over periods of centuries.

It is entirely different with dentistry, as this branch of human knowledge and human activity came into life as a profession quite suddenly. The year 1840 must be designated as the one in which the child was born. As late as 1838 an English dictionary (Tail's Mag. V. 197) defines dentistry as "a calling growing into a profession," which clearly shows that at that time dentistry was as yet not looked upon as a profession actually in existence, but as one yet in an embryonic state.

Of course, more or less successful attempts to relieve suffering humanity from the tortures of diseased teeth have been made not only for hundreds, but for thousands of years past. It was most likely old Egypt to which we should look as the cradle of dentistry as a distinctive branch of the healing art. But even during the century preceding the arrival of the profession of dentistry the caretaking of diseased teeth was largely in the hands of ignorant, uneducated and unscrupulous persons.

Yet during this period we find men who, through their superior skill, their painstaking care and intelligent interpretation of existing conditions, stood far above the average dental manipulator of those days. Some of them had laid the foundation for their dental knowledge under the tutelage of other practitioners, while most of them were self-taught, there being neither schools nor much readily accessible literature to assist anyone desiring to take up the work of the dentist.



Although the study of the diseases of the teeth should have formed part of a physician's education, the medical schools gave practically no instruction pertaining to this subject. Indeed, the medical practitioners of those days looked rather contemptuously upon those who performed any kind of dental operations.

These sad conditions were fully understood by those few prominent men who recognized that much good might be accomplished by proper dissemination of dental knowledge through the three principal channels open to us, viz.: (1) Through personal contact of the parties engaged in the common field of labor, *i. e.*, through exchange of thought and experience in association meetings; (2) through literature, especially when in the form of periodical journals; (3) through proper theoretical and practical instruction given at well-appointed institutions.

The thought that these means should be employed no doubt had been in the minds of many, but it lacked the leadership of some powerful mind to gather the scattered forces, inspire them with enthusiasm and set in motion the machinery through which the desired result might be obtained.

Fortunately, the right man, or, more correctly speaking, the two right men, appeared just at the right time to lay the foundation for the cornerstone upon which the profession of dentistry could be erected as a new but great and powerful factor in the well-being of humanity.

**Hayden
and
Harris.**

The men who became the leading spirits in this noble cause were Horace H. Hayden and Chapin A. Harris. To these men the dental profession, as well as the people of the whole civilized world, owe everlasting gratitude. They stand out prominently and conspicuously as intelligent, energetic, far-sighted and unselfish men, willing and ready to give freely to others their knowledge and experience, and to do so cheerfully even at a personal sacrifice.

Though Hayden was a native of Connecticut, while Harris was born in the State of New York, these two remarkable men came together during the early part of the last century in Baltimore, where both had located as dental surgeons.

**First
Dental
Society.**

The thought of bringing together the better class of dental practitioners by forming a national dental association had been in Hayden's mind long before this society became a reality. However, it was not until August 18, 1840, that a number of prominent dentists assembled in New York City and founded the "American Society of Dental Surgeons," of which Hayden was chosen first president, continuing in that office until his death.



**First
Dental
Journal.**

The second step in the formation of a dental profession was taken almost simultaneously with the first one. It was the founding of a journal having for its object the advancement of dental surgery as a science and as a profession.

An association was formed in New York for publishing this journal, which was named *American Journal of Dental Science*, and appeared in monthly issues. While the name of Dr. Hayden does not appear in the first number of the journal, it is generally recognized that it was his master mind that had pushed matters to a successful realization of one of his cherished dreams. Dr. Harris was a frequent contributor to the columns of the journal in the first year, and became chief editor in the second year, and the exclusive owner of it in the year 1850.

A profession cannot live, grow and develop unless its ranks are constantly strengthened by the infusion of new blood, *i. e.*, through the addition of new members who have been well trained to carry on the work. In other words, there must be some school through which the existing and constantly growing knowledge pertaining to the respective profession may be imparted to others.

**First
Dental
College.**

Both men, Hayden and Harris, fully realized the importance, the absolute necessity of dental education. Strong efforts were made by them to induce the University of Maryland to found a dental chair, and thus add dental instruction to the medical course.

These efforts were in vain. In a letter from the University to Dr. Harris the writer says that the unfavorable action of the faculty was justified by: "the subject of dentistry being of small consequence!" How little did most medical men of that time understand the intimate relationship between the function of healthy teeth and the well-being of the human organism!

Personally, I have always looked upon the refusal of the University of Maryland as a rather fortunate incident. As an appendix to medical education, dentistry for probably a long period would not have derived the benefits which came to it by founding the separate college as a branch of medicine, but upon an autonomous basis.

An independent dental school now having been decided upon, on the first day of February, 1840, the Legislature of Maryland passed an act incorporating the new institution under the name of "The Baltimore College of Dental Surgery.

The incorporators were, besides Hayden and Harris, two physicians who had been selected to act as professors of the more strictly medical branches.



In the charter we find in print for the first time the degree of "Doctor of Dental Surgery," which, after many discussions between the founders, had been decided upon, and which title since that time has been conferred by the first school and by other colleges which quickly followed, upon thousands and thousands of worthy men, who through their labors have benefited the human race in all parts of the world.

From the day of its birth the institution was a complete success. For three-quarters of a century this, the oldest dental school in the world, has carried out faithfully the plans of dental education as conceived by its founders.

I realize, Mr. Provost, the honor you have bestowed upon me this day in inviting me to act as spokesman for this institution, from which I am also the bearer of good wishes and of hearty congratulations on this momentous occasion of the opening of the Evans Dental Institute. Seventy-five years ago the foundation stones for the profession of dentistry were laid, and in the course of those years a powerful organization has been built up. To-day a mighty tower of strength has been added to the edifice in the institution which begins life this day.

May the searchlights of this tower penetrate to unknown fields of labor; may they reveal new facts, new conditions, new methods which may serve to shed additional luster on the art, on the science and on the profession of dentistry, and bring new blessings to humanity.

The Late Thomas W. Evans.

Thomas W. Evans, the founder of the Thomas W. Evans Institute, was born in Philadelphia, December 23, 1823, and died in Paris, France, on November 14, 1897, shortly after his return to Europe after a brief visit to America. As a boy he lived with his parents in the house which stood on the lot at the northwest corner of Fortieth and Spruce Streets, where the new building now stands as a permanent monument to the great American dental surgeon. He was the youngest of three sons, Rudolph, Theodore, and Thomas, the subject of this sketch. He was educated in the common schools of Philadelphia, and at the age of fourteen entered the employ of Joseph Warner, a gold and silversmith of Philadelphia, whose business included the manufacture of certain surgical instruments, and incidentally of plate, solders, and some of the implements used by dentists. His apprenticeship with Warner brought him into occasional contact with dentists of that period and their methods, and in that way he no doubt derived the impetus which led him later to enter upon the study of dentistry as a profession. In 1841 he became a



student in the office of the late Dr. John DeHaven White, of Philadelphia, with whom he remained for two years. During his studies with Dr. White he attended lectures at Jefferson Medical College, from which, in due course, he was graduated.

He practiced his profession for a time in Maryland, and later, in partnership with Dr. Philip Van Patten, at Lancaster, Pa., with whom he remained until 1847. It was during his stay in Lancaster that Dr. Evans performed a series of gold contour filling operations, which he exhibited at the annual exhibition held under the auspices of the Franklin Institute in the fall of 1847, for which he received a gold medal in recognition of the novelty and merit of his work. Dr. C. Starr Brewster, an American dentist practicing in Paris, had his attention called to this work done by Dr. Evans, and was so impressed by it that a partnership was arranged between them.

The partnership between Drs. Brewster and Evans lasted until 1850, during which year Dr. Evans opened an office on his own account in the Rue de la Paix, and entered upon a professional career which was as wonderful as it was unique.

Although Dr. Evans was not the pioneer American dentist in Europe, he brought to Europe a combination of personal characteristics and special technical ability which not only made his a conspicuous figure, but gave an impetus to dental practice and a status to its representatives before unknown.

Dr. Evans as an operator may have had many peers, and in recent times many who excelled him as a practitioner. There are not wanting those who place but light estimate upon his abilities as a dentist, and who attribute his phenomenal success to abilities quite apart from his skill as an operator. There is, however, evidence tending to show that he was an operator of more than usual ability.

His professional equipment in itself cannot be regarded as the cause of his phenomenal success. His abilities as a practitioner were merely a contributing factor in a complexus of characteristics which have helped to make Dr. Evans the most conspicuous figure connected with dentistry. Dentistry became to him the stepping-stone which served as a means of bringing him into contact with those to whom he made himself of value and who contributed substantially to his success. He was a born diplomat, possessing a keen perceptive faculty which enabled him to read and correctly understand human nature, delicacy and firmness in his treatment of affairs, a rigid honesty of purpose, and a foresight which was intuitive. In short, he knew how to make the best of his opportunities, and in some degree create them. His association with Dr. Brewster brought him into contact with the aristocratic element of French



society; it was his avowed ambition to secure for his clientele all of the crowned heads of Europe, and it has been asserted that in this he succeeded. By his skill and attractive personality he drew them to him and won their confidence. His confidential relationship with Napoleon III has become historical, and its two most important results—namely, the diplomatic mission intrusted to him by Napoleon to President Lincoln during the war of the rebellion, which resulted in the neutrality of France with respect to that issue, and the aid rendered by him to the Empress Eugenie in her escape to England during the riots following the fall of Sedan at the close of the Franco-Prussian war—are matters of common knowledge.

It has been stated that Dr. Evans owed his fortune to the patronage shown him by Napoleon III. This is not wholly true. It is a fact that the doctor's reputation was greatly enhanced by the confidence of the French Emperor, and that his list of patrons was greatly enlarged as a result, but by far the greater portion of his accumulated wealth was due to the real estate investments made possible through the personal friendship of the Emperor.

Much of Dr. Evans's life was devoted to work of charity and philanthropy. He rendered important service during the Crimean and Franco-Prussian wars in the care of wounded soldiers, and in introducing more sanitary and humane methods in military hospitals. Sent by the Emperor at his own suggestion during the Crimean war to study the sanitary condition of European camps and hospitals, he was so impressed by the pictures of misery and suffering there presented to him that on his return he secured the interest of the civilized world in important measures of reform. His record during the late Civil War in the United States will be found in the history of the United States Sanitary Commission, which he organized in Philadelphia, coming over especially to serve his native land in the hour of need. During the Franco-Prussian war he was probably the only man in Europe who might pass from camp to camp. During all this memorable campaign he personally directed the movements of the ambulance corps of the Red Cross Society.

It was the elements of character which led him to undertake such work, and the associations which it made for him that more than all else contributed to his reputation and material success. Throughout his whole career he never forgot, and, indeed, constantly emphasized, two facts: that he was an American and that he was a dentist. In his loyalty to his profession he was steadfast; his faith in its possibilities was unflinching; he was always the champion of high professional ideals. The principles which animated his professional life he manifested from the beginning of his work, and were in marked contrast with those of many



of his early confrères. In a communication written soon after he located in Paris he said: "I may have but little to impart, yet that little is at the service of each and all members of my profession; and gladly would I hail the day that should make all that is sound in science and valuable in art common property. . . . By the discussion of subjects connected with our profession, and by the contribution of each according to his ability, by the comparison of the different modes of practice and the making known all new discoveries and improvements, we shall place the profession on more commanding ground and better serve the generation in which we live."

That his professional life was lived in harmony with these principles the results show. The measure of success which he attained was not limited to material acquisition, but was extended to the elevating influence which he exerted upon the general status of his profession. He lived to see his chosen calling placed upon more commanding ground, and the value of its ministrations to his generation substantially recognized.

That his life-work was a large contributing factor to that end cannot be doubted, and when all of the factors which have helped in the advancement of the professional status of dentistry are fairly estimated, the influence of the life of Thomas W. Evans will be among the greatest.





American Society of Orthodontists.

Discussion of Dr. Woodruff's Paper,*

The Causes of Abnormalities, Heredity or Environment.

Dr. James B. Morrison. It has indeed been a privilege and pleasure for me to have had this paper in my possession for the last two weeks. It has long been a vexed question as to the part which heredity and environment play in malocclusion, and it is most opportune that this society should have presented such a wonderful assembling and sifting of the most advanced thoughts on the subject. I can sympathize with those present who hear this paper read for the first time, as it is something to sit up nights over and study, and I have read it with increasing interest many, many times. Although not presuming to discuss it fully, there are some points I would like Colonel Woodruff to make clear to me. There are many of us who through close application to practice draw our conclusions from clinical evidence, and as one of these I am a believer in the direct inheritance not only of subnormal development, but of peculiar characteristic malocclusions. However, this theory has been set up and knocked down and set up and buffeted about to such an extent that I am exceedingly anxious to get support for it. I have naturally read this paper, looking for this support, and although there are conclusions which point to it, I find that the working of heredity and environment are so intricately associated that it is very hard to say where one ends and the other begins, or whether they do not work harmoniously together in the multitude of changes, good and bad, which have brought about the present condition of the human species. I understand from the paper that the germ plasm is affected in intra-uterine life by the environment, and that the changes

*Dr. Woodruff's paper was published in the February issue.

effected will or can be transmitted to the progeny; but that mutilations of the body of the parent are not transmissible. And I quote this extract from the paper: "The great advantage of Wiesmanism is the way it settled the baseless idea that a modification of the body so influenced the germ cell in the ovaries and testicles that they would develop into a body possessing the same anomaly."

**Clinical Evidence
of Transmitted
Anomalies.**

Now this is a point upon which we as orthodontists have conflicting evidence. I feel sure that all of us here can recall cases where there had developed malocclusion, which bore a marked resemblance to conditions which existed in the parent, and although these are attributed to like conditions affecting development, I have seen them too often and of too striking a character to consider them anything else but the transmitted result of tissue change in one or both parents.

It is rather harder to believe that mutilations of the parent can affect the child; but clinical evidence is again very conflicting, and although I do not find or think that mutilation of the adult will affect the offspring, mutilation such as the removal of teeth of the child during the early developing period of the jaws will affect their offspring. The exact transmitted effect of early removal of first permanent molars is rather hard to trace and isolate, being associated with under-development, which it naturally causes; but the removal of anterior teeth presents a more characteristic and localized effect. I have here the casts of teeth of two children whose mother had the left upper permanent lateral extracted in childhood. I have also casts of the children's teeth, and I am sure we all have, where a canine of the parent had been removed in childhood, and there is a peculiar characteristic lack of development of the alveolar tissue in the canine region, making a pronounced malocclusion inevitable.

These conditions of development, to my mind, are more than coincidences, and point to the vital importance of recognizing the effect on posterity of conditions which exist and influences which affect the development of the child, whether it be light, heat, malnutrition, disuse of organs, or mechanical interferences in the development of the alveolar tissue by the removal of teeth. Dr. Woodruff has aptly said that the subject belongs to preventive medicine.

I do not know how the majority of this society feel in regard to heredity in relation to orthodontia, but can we not give as the principal cause of malocclusion the accumulated result through generations of lack of use of the teeth, and the mutilations previously referred to? If this is the case, is there not a tremendous field for preventive orthodontia, and is it not time to make united efforts? I am obsessed by a feeling that



Items of Interest

scientific research is often at variance with clinical evidence; but I hope this is nothing more than an obsession. We know that many observations in medicine and dentistry have been disproven by scientific investigation, but even the ultra-scientific disagree, and after all, the one must corroborate the other. This is why I feel that it has been such a splendid thing to have this paper. We must get together on this subject. The laboratory investigator and the clinical observer must help one another.

I agree with everything Colonel Woodruff has said and openly disagree with the gentleman (Dr. **Martin Dewey,** **Kansas City.** Morrison) who opened the discussion. There is no questioning the fact that we find malocclusion of the

teeth in children sometimes, where there has been malocclusion in the parent, and if we go back and investigate the surroundings, we will find these conditions have always been the result of some environment. It is a fact, that under certain conditions, as in the case of bacteria and plants, the character of the germ plasm may change, and you will develop a new species, almost. You can often do it in a very gradual manner. Our attention has been called to the fact that blonde races, by conditions of environment, may be changed to brunettes, because they are more able to exist in some localities. You can take certain plants under one environment and by changing the conditions produce entirely different plants. For instance, in California, Burbank has shown that certain plants that grow near the sea-coast are influenced by the wind and grow large cilia, but farther away from the coast that development of cilia does not occur. A plant under unfavorable environment will develop these cilia and they are transmitted in that locality. Change the locality and that disappears. This shows the close influence of environment upon the germ plasm in that particular locality. As the result of transmission of certain characteristics, we have had before the society the question of the bull-dog, which one of my friends always brings up. Certain characteristics of this animal are produced by inbreeding and selection. We also note the disappearance of certain characteristics when you cross a bull-dog with any other breed, showing that the character which is of no particular advantage is the first to disappear.

I was also glad to hear what Colonel Woodruff had to say in regard to the effects of inheritance on degeneration, the effects of environment upon criminals, because I have had occasion to discuss that question many times. Criminals reproduce themselves because they live in a favorable environment to raise criminals. We must consider the question of variation which is always occurring. If you take a dozen people you will find a certain number of them of average height. A certain number are short, and a certain number long or tall, but if you make

an average you get the same height. If you intermarry these short people with tall people, or tall people with short people, they will produce various kinds of progeny. If a tall man be at a disadvantage in that particular locality, the tall man would necessarily disappear. Malocclusions are a decided disadvantage. The reason a deformed limb cannot be transmitted to the offspring is because the normal is always produced.

As regards malocclusion, I have called your attention to the fact before that the deciduous teeth are nearly always in normal position. You have normal occlusion. If you do have malocclusion of the deciduous teeth, it can be traced to some result of environment; that is, in the child the deciduous teeth develop early in intra-uterine life and to a great extent develop in a normal condition, but from the time the permanent teeth begin to erupt, or from the birth of the child the permanent dentition of the child is the result of environment, as improper feeding, improper development, improper living, improper breathing, all of which tend to produce malocclusion.

There is no evidence to support the theory that malocclusion is ever inherited. There is no evidence to support the notion that the large teeth of one parent and a small jaw of the other can occur in the offspring. If they do occur, you will find just as many large teeth as small jaws. You will find just as many large jaws with small teeth as there are large teeth in small jaws. If it works one way, it will have to work the other.

**Dr. R. Ottolengui,
New York.**

I am naturally much pleased with Dr. Woodruff's paper because it lends so much support to my own view, which is that mutilations and malformations are not inherited.

We are handicapped in our studies of inheritance as related to man, because the individual lives so long. It is much simpler to study the transmissions of characters in the lower animals and plants, because the complete cycle of a generation is so much shorter. It is interesting, therefore, to study and consider these phenomena, as possibly correlated with seemingly similar occurrences in the lives of human beings; yet we should not too quickly accept as proven, that what occurs in vegetable life or with the lower animals, would likewise hold true with human beings.

However, as heredity has been discussed from the standpoint of facts related with bacterial and plant life, perhaps you will pardon my speaking of the lower animals and insect life.

Dr. Woodruff spoke of blondes, blue-eyed races, and deaf-mutism. There are some peculiar and interesting facts in relation to these points to be found in the histories of the domestic feline.



Congenital Deafness.

It is practically an unknown occurrence for a cat to be born deaf, except blue-eyed, white cats, and with these, congenital deafness is so common that when the contrary occurs the dealer advertises: "Blue-eyed, white cat for sale; sound hearing." Yet the yellow-eyed, white cat has sound hearing. If a yellow-eyed white cat be mated with a blue-eyed, white cat, those in the litter having blue eyes will be deaf, while those with yellow eyes will have sound hearing. Here is another very odd fact. If blue-eyed, white cats be mated together the blue color fades more and more with each breeding, but if a yellow-eyed mate be introduced the progeny having blue eyes will have the blue of a deeper color. Thus breeders when trying to produce white cats with beautiful blue eyes are compelled to utilize a yellow-eyed stud, even though this results in some yellow-eyed kittens which are of little value. Now observe that in this mating we have two blue eyes in one animal and two yellow eyes in another. But the finest blue-eyed, white cats in this country have been produced from a pair, each of which has one blue and one yellow eye, known as odd-eyed cats, for which reason they are barred from the cat shows. Yet their kittens have won dozens of prizes.

Sports.

You all have heard of the tortoise-shell cat, but it may be new to some of you that the tortoise-shell is really a "sport," and is always a female. Thus the production of a tortoise-shell cat in the highest perfection is most difficult, since there are no males. The tortoise-shell then is either produced by mating a blue cat with an orange tabby, the litter perhaps containing one or more blue tortoise-shell kittens; or what is preferred, mating a fine black with an orange tabby, which produces the most brilliant coloring. In England there is the history of a great prize winning tortoise-shell, that was mated with various sires with the following remarkable results. Mated with a black, the entire litter was black. Mated with a blue the entire litter was blue. And mated with an orange the entire litter was orange. What would have occurred had she been mated with a white, a brown or a silver I do not know, but it was not deemed wise to carry the experiment beyond the three colors naturally connected with the tortoise-shell. The interesting fact was that the mother, herself a "sport," did not reproduce a "sport" like herself in three litters. This I think is a fairly good argument against the transmission of anomalies, and in favor of the adhesion to type. Be it remembered, too, that the cat is a mammal.

Effect of Diet.

We have the exact analogy to this in insect life. You all are familiar with the large black and yellow, swallow-tailed butterfly, common along the entire Atlantic coast. Its name is *papilio turnus*. There is

a variety called *glaucus*, which is analogous with what I have told you of the tortoise-shell cat. The male of *turnus* is always black and yellow, really yellow with black stripes. In New England the female is orange and black, and is known as the typical *turnus* female. In the Carolinas and southward, however, the female is black, and is called, variety *glaucus*. To test the question as to whether these were two different species with similar males, or a single species with two forms of female, Prof. Smyth, with the aid of a New York correspondent, made experiments. He collected eggs from *glaucus*, the black female, and sent them North to be reared. They were fed on the plant which the caterpillar eats in that locality, and out of a hundred specimens, every female was the true orange or typical *turnus* form. Some of these were mated with native *turnus* males, the eggs divided and half returned to Smyth. All the eggs reared in New York produced typical females, while all those reared by Smyth produced *glaucus* females. Both men again mated females and divided the eggs. The question now was to determine whether it was climate or food which produced the *glaucus* form. Therefore the eggs in each locality were fed half on the northern food plant, and half on the southern, and in each instance all that were fed on the plant common in the South produced the black or *glaucus* females, and those fed on the northern food plant produced typical orange and black females. This, I think, definitely proved that the *glaucus* or black "sport" was for some odd reason due to the food plant. Why the *glaucus* form is never a male, and why the males should not be affected by the food plant, are seemingly an unsolved and perhaps an unsolvable problem. But these facts show at least how difficult it is to actually pierce the mystery of heritage. When the females are so totally different, dependent upon the food, it is strange that the diet should have no effect upon the males.

**Effect of
Cold.**

Though I fear that I am speaking too long, may I touch on the question of environment? There is another common butterfly, *vanessa antiopa*. The wings are of a mahogany brown with an orange and a blue strip at the extreme outer borders. A man in New Jersey collected several hundred of the pupæ of this butterfly, and placed them in a refrigerator. At definite intervals he would remove a stated number from the refrigerator, keeping them thereafter at room temperature. When all the imagoes had emerged, it was found that the blue and the orange had faded away or disappeared entirely, just in proportion to the time that the pupæ had been exposed to the icy temperature.

**Effects of
Locality.**

There is a very beautiful sphinx, *triptogon modesta*, fairly common in New England, which is dark, mouse-colored gray. A similar creature, though rather larger, was taken in California, and

is a pale, creamy color. The collector named it *triptogon occidentalis*. In my own collection I have a series taken from New York to California in various States between the two coasts, and as we go West we find the dark gray color gradually changing to the light cream, apparently showing that the color depends upon climate, or food, or both; at all events upon environment.

Hybrids have also been produced in insect life. **Hybrids.** *Attacus cecropia*, the largest of our American moths, sometimes called the American silk worm moth, will mate with any of its congeners, *attacus columbus* in Canada, or *attacus gloveri* or *ceanothi* from the West. Oddly enough I have never seen a hybrid of any two of the other three, but I have hybrids of *cecropia* with all the others. In every case it is perfectly easy to determine which species was mated with *cecropia* to produce the hybrid, the progeny being a symmetrical suffusion of the markings and coloration of both parents.

As bearing upon what Dr. Woodruff said of accidents during intrauterine life, let me relate a remarkable experiment with this same moth, *cecropia*, which was made by a Columbia professor whose name, I regret to say, escapes me. He took numerous pupæ of *cecropia*, and froze them hard enough so that they could be divided with a razor without allowing their fluid interior to move. Some he divided horizontally, and others vertically. He then applied the one-half of a male pupa to the similar half of a female pupa. These divided pupæ reunited, and developed to the imago stage, the progeny being half male and half female in form, a result which I think was as astounding as any experiment ever reported in so-called plastic surgery. The males and females of this moth are easily distinguishable, both by their pattern and coloration, and also by the fact that the antennæ of the male is very much larger and coarser than that of the female. Thus the pupæ, which had been divided vertically produced moths with a male antenna and wings on the right, and a female antenna and wings on the left side. Where the incision had been horizontal, the upper wings were those of one sex and the lower wings and body those appropriate to the other. Thus we may say that hermaphroditism was here produced surgically, the operation having been performed on the pupæ, which is between the larval and the imago stages.

In passing this it is worthy of note that whereas many of the large collections (notably that made by Strecker) show specimens of hermaphroditism, specimens of hybrids are almost never found in nature; indeed I do not know of an instance that could be called authentic, excepting the single instance of a European female sphinx, which was tied

to a tree during the night, by a Brooklyn collector, and was found mated with a congeneric American spinx, the resultant eggs producing an imago, the underside of which resembles the American, while the upper sides of the wings more closely simulate the European. Yet even here, at least one of the individuals was in captivity. The point I wish to make is that all hybridization of this sort known to me have been produced by man's intervention and not by untrammelled natural selection.

**What Is
Type?**

We talk glibly of type, and of the persistency of type. How are we to determine just what is typical in man? What race or tribe is there in the whole human family that is not an admixture, with the possible exception of the Laplanders and the Fuegians? What is type? In entomology, when a man names a new species, he pins a label upon the specimen used for the description, and labels it "Type." This, of course, is an arbitrary rule. Harry Edwards, the great actor and equally great entomologist, once named a moth from Colorado. He had hundreds of specimens before him, varying from almost solid brown with a few cream-colored splotches, to almost all cream with a few brown markings. He made a series of ten pairs, all different as to individuals, but grading from one extreme to the other, and he labeled the entire set, "Type." Was he not right, and is it not much the same with humans?

**Transmission
of Malocclusion.**

Dr. Morrison builds an argument on a single instance where two children had a lack of space in the same region as the mother. What will he say of the following case? I had a child with the lower left bicuspid in contact with the lower lateral. The mother had the temporary cuspid retained in the same locality. I radiographed the mother, and the missing cuspid was congenitally absent, but when I radiographed the daughter the missing cuspid was present. Note that the congenital absence of the cuspid was not transmitted.

In another of my families there are twelve children. With identical ancestors, should we not find some similarity in the malocclusions, if malocclusion can be transmitted? Both parents have slight aberrations from the normal, no more. The first born, a girl, had a practically normal occlusion. In those of the others who have developed permanent teeth there are various degrees of malocclusion, including two cases of Class II, Division 1, and one of Class II, Division 2. None of the malocclusions resemble each other or the parents in any marked degree.

But, of course, isolated cases prove nothing; neither where the malocclusion are similar or dissimilar. The last case is of interest only because there were so many children.

**The Jukes
Family.**

All who disbelieve in the influences of environment should read the history of the Jukes family, to which Colonel Woodruff has alluded. This family was practically segregated for several generations, and there was every grade of degeneracy, including criminality in the males, prostitution among the females, and alcoholism and pauperism among both. Yet this great truth was discovered, that whenever a Jukes man escaped from his environment, went and lived at a distance from and away from communication with his own people he ascended the social scale. Likewise when a Jukes woman married a normal outsider and changed to the environment of her husband she lived a more normal life. In conclusion the optimist must continue to hope that mutilation, deformities and degeneracy of all kinds, are not transmissible; that there is always a tendency towards the highest type. Otherwise the future of the human race would be hopeless indeed.

**Dr. F. C. Kemple,
New York City.**

I would like to ask Colonel Woodruff a question in regard to deaf-mutism. As I understood him, he made the statement that deaf-mutism is persistent; that it is a permanent and transmissible characteristic. It just happens that I know of a few deaf-mutes whose parents were apparently perfectly normal. They had three children, and two of them were congenitally deaf. I know of other mutes where the father and mother are both mutes, and their children are apparently perfectly normal children, bright and active. I just wonder what percentage of exceptions there might be to the rule.

**Colonel Woodruff
(closing).**

The cause of arrest of development of the jaw is a very great puzzle to me. I have been studying it for twenty years, but I find one generalization. In Japan I found that those who live in cities are very prone to arrest of development of the jaw and malocclusion in very bad form. In China I found the same thing. The great, splendid specimens of Japanese wrestlers and acrobats, are all countrymen so far as I know.

I was very much struck in London two or three years later to find an enormous number of these deformities among the city people, and so far as I could see they were much fewer on the farms. I have found a great many in this country, too, and there is something injurious in the abnormal environment of city life which is not what we are accustomed to by Nature. A cause may be the bad nutrition of the city people as compared with those of the country. The well-to-do in the city live very much better than those in the country. Nevertheless, in New York State, the death rate in the country districts is greater than in the cities. They have many deformities, too. Their tonsils are enlarged, they have adenoids and bad teeth. Children are overclothed in the summer and under-

clothed in the winter. They are overheated in the homes and sent out perspiring. I have an idea that the bad methods of living have something to do with the remarkable fact of deformities of the lower jaw being so common. Whether it is hereditary or not, I think, depends upon the definition we make, and also whether it is a temporary or spurious heredity which lasts a certain number of generations.

Some remark was made about blondes changing to brunettes. That never occurs. Blondes disappear by higher mortality. You have never yet seen a blonde race change into a brunette one except by the very long, drawn-out process of survival of the fittest.

In regard to white cats, they are more or less albino, and are somewhat degenerate. The albinos, I mentioned, have poor resistance. The sight of the albino is very poor. They are affected by too much light are short-lived, and they transmit this defect in accordance with Mendel's law.

If we look into the question of transmission of characters by mating between different kinds of cats, we will find they follow Mendel's law. I cannot say definitely about the cats which Dr. Ottolengui mentioned, but I think they follow Mendel's law.

As to butterflies showing the effect of environment, it has been proven that certain insects change from one climate to another. If the environment changes and they happen to be better fitted for that climate they survive. There is a certain butterfly which is dark in cities and light in the country, and it has been increasing in numbers as cities have increased in size and number in Europe, and this has something to do with the increasing brunetteness of cities. Blondes disappear from cities unless they live in the suburbs. If you take any city and go from the congested districts outward, you will find an increasing proportion of blondes, because they have instinctively known how to take care of themselves.

With regard to deaf-mutes appearing in normal families, that is a case of a recessive character reappearing. Characters may be recessive for several generations, and then appear upon mating of the proper kind. Deaf-mutism, polydactylism, albinism, and everything of that sort will appear sometimes after several generations.

Correction.

We regret that some errors occurred in the article by Dr. Milo Hellman which appeared in our last issue. Figs. 5, 6 and 7 on page 168 should have been numbered 8, 9 and 10, whilst the figures numbered 8, 9 and 10 should have been numbered 5, 6 and 7. Fig. 12 on page 171 is inverted. The word "constructed," on page 177, seventh line from the bottom, should read "constricted."



Dentistry in Public Institutions.

By DR. FREDERICK A. KEYES, Boston, Mass., Superintendent of Dental Clinics, St. Vincent's Orphanage.

Read before the Second District Dental Society, January 1915.

Dr. Hyatt's invitation to address this meeting on dentistry in public institutions pleased me greatly. Although three weeks is a rather short time in which to obtain full material for a subject of such gigantic proportions, nevertheless I selfishly decided that to be present at one of the meetings of this society would be most instructive, even though I imparted to you no new ideas upon this matter.

Institutional Dentistry is a term which I have been using in Massachusetts for the last four or five years. This term, however, is a misnomer; for I make bold to say that with few exceptions there is no such thing as systematic dentistry in our public institutions. I proved this to my own satisfaction in the following way. After a careful perusal of the Thirty-fifth Annual Report of the Massachusetts State Board of Charities, which contains a full report of all work done in all incorporated State Charitable Institutions, under the title "*Suggestions for Improvements*" I found only two references to dental work: One states that "the Hampden School (a reform school for boys) has confined its dental care largely to the extraction of teeth"; On the same page it states that "the Middlesex School has a well-equipped dental laboratory, which employs a dentist one day a week."

This book of about 800 pages, gentlemen, the most complete report of institutional work in the State, has exactly *four lines on one page* devoted to dental work.

Not satisfied with this meagre information I obtained the Fifteenth Annual Report of the State Board of Insanity, a volume of 400 pages which deals more minutely with medical conditions, and found not a single reference to dentistry. The report of the Board of Prison Commissioners, a volume of 200 pages, contains no report other than a real plea for this sort of work by Dr. Edith R. Spaulding of the women's prison at Sherborn, Mass., who states: "One of the most important defects which presents itself in the physical examination of the women is the exceedingly poor condition of the teeth. Besides the extreme physical pain caused by such defects it will be remembered that poor teeth are a factor in many digestive disturbances, and the cause of much ill health. In the examination of sixty-four consecutive cases it was found that fifty-two were in need of dental work. Each individual had an average of four carious teeth; two-thirds of the carious teeth needed extraction, while one-third needed filling. The conditions caused by poor teeth alone form a large part of our medical work at present, and cannot adequately be corrected without the employment of a dentist in the institutions."

Seeking still further information, I wrote to thirty-four superintendents of institutions mentioned in the Report of the State Board of Charities and received in reply twenty-four letters, which disclosed the fact that in eight of the twenty-four some form of dental work is being done; six of these eight have a dentist one morning per week; one, three mornings per week. One (the State Infirmary) is blessed with the presence of a resident dentist. The other sixteen report no dental work done at their institutions. Therefore approximately twenty-five per cent. of institutions in Massachusetts have some form of dental work. (These letters I have with me; they are in most cases very interesting reading.)

In the almshouse, prisons, and State farms the system of medical inspection is the same. The new comer in these institutions is given a bath and hair cut, and a complete examination is made by the physician in charge. All clothes are fumigated, and if any eruptions on the body are observed, the inmate is immediately isolated. This careful inspection is as it should be. Stringency in individual cases safeguards the welfare of the whole. In this way many epidemics of infectious diseases are controlled. The introduction and spread of scabies, variola, etc., are minimized. But in spite of all these precautions epidemics do occur. Do neglected oral conditions enter as a plausible factor in these epidemics of mysterious etiology? Is the present system of inspection and treatment sufficient even though it includes all modern prophylactic measures, for example, the Wasserman test, blood-count, anti-typhoid serum, etc., which boldly disregard the oral cavity as a possible source of infection?

**Treatment of
Pregnant
Women.**

In the Massachusetts Lying-in Hospitals, under the jurisdiction of the State Board of Charities, there is a yearly average of 10,000 births. The method of treating pregnant women is improving each year. Whereas, in the past, treatment was limited to care of the mother during labor and the child at birth, at present the care of the mother begins as soon as possible. As soon as pregnancy is reported various instructions are given to the patient as to diet, personal hygiene, etc. These precautions have brought forth favorable comments from gynæcologists and obstetricians throughout the country, and have been instrumental in reducing puerperal septicemia to a minimum. But search as I may in the reports of various lying-in hospitals, I have been unable to find any data regarding dental work. How many of these 10,000 mothers, charges of the State, need dental attention, during this most important period? The old adage, "For every child a tooth" is only too often proven true. The pains of labor are recorded as the greatest of all pains; add to these odontalgia and the pen of a Dante would be inadequate in describing the Inferno of the sufferers. During the first few months of pregnancy the teeth should be carefully guarded, all permanent fillings inserted and the patient submitted every month for examination. This would not only prevent odontalgia during the last trimester but would be the means of preventing this added nervous strain. Furthermore the mouth might be eliminated as a possible source of infection in post labor. Many of Boston's most famous obstetricians advocate dental care during pregnancy. One of these has stated: "The thorough treatment of a woman's mouth during the early months of pregnancy I consider of paramount importance to the health and comfort of the patient, and a prophylactic measure too often neglected in obstetrical practice."

**Dentistry
in General
Hospitals.**

In the general hospital the practice of dentistry is primitive indeed. The work is usually conducted as an adjunct to the out-patient department, and consists merely of extraction, treatment of fractures and general emergency cases. I do not mean to underestimate the great good done by these dental clinics, but I feel that there is a much broader field in the main hospitals themselves which should be open to dentists. Every hospital should number among the members of its staff a dental surgeon with all the entailed rights of the other members. Before all laparotomies the teeth should receive diligent care. In most cases plastic work will be all that can be accomplished, but where more complete work is possible it should be done. Many dentists have advocated this before; but few indeed are the surgeons who are

impressed with the importance of oral cleanliness as an ante-operative procedure. In this department also I have been unable to find any dental data.

**Tuberculosis
Hospitals.**

In institutions for the treatment of tuberculosis how great a per cent. could be helped by dental treatment? This is another great field for dental work which is at present lying fallow. How many latent tubercular germs lying in the mouths of so-called cured patients are responsible for recurrence of the disease?

**Hospitals for
the Insane.**

In hospitals for the insane we find more desire for dental work than in all other institutions. This is probably due to the fact that here dentistry has been done, spasmodically, to be sure, but with noticeable results. For example; the report of the Lakeside Hospital for the Insane in Cleveland, printed in the *Dental Cosmos*, vol. 52, page 527, contains this significant statement. "Of fifty-eight cases of mental and nervous diseases nine were cases of dementia precox operated on dentally. Six of these have recovered, two improved and one remains unimproved. These were cases of impacted teeth which evidently were causing sufficient reflex pain to affect the brains of the patients." Personal interviews with dentists connected with institutions of this nature substantiate this report. In most of these institutions in Massachusetts I find that there is a dentist in attendance one morning a week; but surely this time is very insufficient to the dental needs of the inmates, and affords opportunity only for emergency work. I quote the following from letters received from superintendents: First, from Dr. Frost, Boston State Hospital: "We engage the services of a dentist for two half days each week, and are planning to extend the service, which we find to be of much value." The second reads: "The services of the dentist have done more to add to the comfort of our patients than any one other thing we have ever done." My investigation showed that the insane hospitals are far in advance of other State institutions in the matter of dental care; but here too the conditions are far from ideal.

Consequently from a careful compilation of statistics it is in my opinion fair to state that eighty-five per cent. of all adults in State institutions are in need of dental work, and that less than half of these are receiving proper dental attention.

**Industrial
Schools and
Asylums.**

In State industrial schools, orphan asylums, etc., there are over 5,000 children between three and fourteen years of age. The oral conditions here are appalling, and the proper handling of the situation would be a serious problem. The only data on this



question which I have been able to find are reports from two boys' reform schools, whose total membership is less than 200 boys. These are the only two reform schools reported as having dentists; this in spite of the fact that in the report of State Board of Charities for 1913, page 103, there are recorded 989 cases of sickness in the Suffolk County School (of 95 members) during the year 1912, which indicates the probable health conditions which would be found existing in other institutions for children if the same medical scrutiny were used to bring them to light. All concede that over ninety-five per cent. of the public school children are in need of dental care. This same ratio must be true of public institutions, even though there exist no statistics of dental examination in these places.

**Placing
the Responsibility.**

In private charitable institutions I have found that a number have visiting dentists. An interview with these men discloses the fact that the work here consists merely of emergency treatment; the dentist simply extracts a tooth when necessary, or relieves pain. Systematic dental work is therefore a rarity in all public or privately conducted institutions for children in Massachusetts. Admitting that these conditions do exist, who should be blamed for the epidemics of measles, diphtheria, and other childrens' diseases which sweep through public asylums, most of which cannot be entirely prevented even with the present modern medical system? Is it the poor children themselves, whose faces are scrubbed daily, heads washed weekly, and who are models of external neatness, but whose mouths are filled with virulent disease germs? Is it the superintendents, who are for the most part conscientious and over-worked in their efforts to keep within the State's appropriation? Is it the physicians and dentists themselves, who have not blended their cries often and loudly with those of the suffering children, to be heard by the powers who might remedy conditions? Whoever it may be, let him awaken and appeal to all public spirited citizens that these poor dependent children, our future citizens, may have proper dental treatment.

The Remedy.

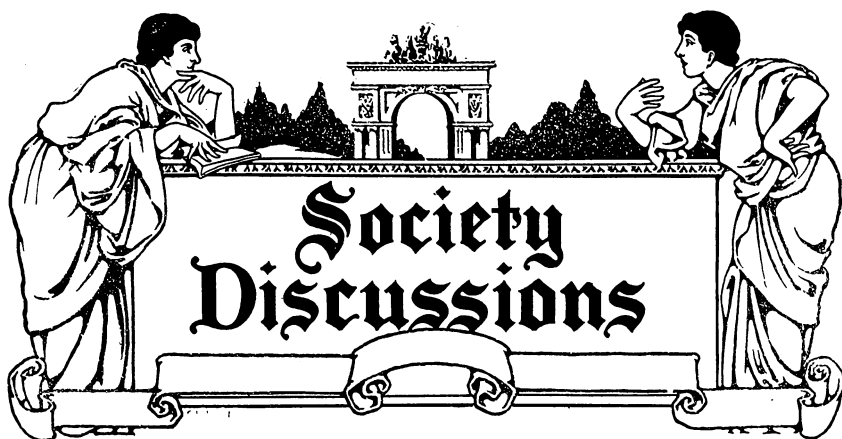
Gentlemen, these are the dental conditions in public and private institutions in Massachusetts. Now what is the remedy? The one solution to my mind is legislation which shall insure the appointment of a dentist to each institution, and of a committee whose duty it shall be to see that systematic dentistry is practiced therein. These dentists should receive sufficient monetary compensation to attract the ablest men of the profession to this most interesting field of work. Until this is done, and a definitely organized system of procedure is established under the auspices of the

State, all efforts by individuals in various institutions will be comparatively futile and useless.

To conclude: I have shown you, gentlemen, the non-existence of systematic dentistry in our State institutions and the crying need for such work. That the project is not merely the dream of an idealist, but most practicable and commensurable in its results I can prove to you by the following facts:

At St. Vincent's Orphan Asylum, Boston, a private institution, which houses 200 children, systematic dentistry was begun in 1910 as an experiment. Before this there was a yearly average of 103 cases of infectious diseases. Since that time there have been only five cases in all four years and not one case in the last year. These figures, gentlemen, tell their own story and need no further word of mine, I am sure, to convince you that systematic, compulsory dentistry is the physical salvation of the inmates in our public institutions. Gentlemen—I thank you.





**New Jersey State Dental Association.
Second Day, Evening Session.**

President Gelston called the convention to order at 8:30.

Immediately after the essay of the evening has
President Gelston. been read and discussion thereupon finished a smoker
and entertainment will be held in this room to which
all are invited and everyone present is welcome to remain.

Dr. Fowler will now introduce the essayist of the evening.

Chairman Fowler. (Mr. President and Gentlemen: It is with a great
deal of pleasure that we announce to-night another
era, another new discovery that is being brought
forth at the New Jersey State Dental Association's meeting. The New
Jersey State Society is one of those societies that make history in den-
tistry, and it is fortunate indeed that we are able to present to you to-
night one of the newest things in modern dentistry. The work of Dr.
William H. Fitzgerald, head of the nose and throat department of the
St. Francis Hospital, of Hartford, Conn., stands out as distinct and as
revolutionary almost as the announcement that came from Hartford
many, many years ago by Dr. Wells and Dr. Morton. It seems to me a
rather strange coincidence that another such discovery should come from
that same city. I take very great pleasure in introducing to you Dr.
William H. Fitzgerald.)

(Dr. Fitzgerald then read his paper, which appeared in the March
issue.)

I will now ask Dr. Charles H. Riggs, of Hart-
President Gelston. ford, Conn., to open the discussion on this subject
of Reflex Anesthesia.

Discussion on Reflex Anesthesia.

When Dr. Fitzgerald asked me to come here to
Dr. Charles H. Riggs. your meeting I told him that I am no speaker and all that I could do would be to tell in a simple way what I had accomplished in my own work. When I first saw these illustrations I was rather dumb-founded; I did not think it could be done. However, I am here to tell you that it has made life a lot easier for me for the last three or four months. I have laid aside practically all local anesthetics. I spent, I think, about five days on one patient, working on two cavities. Then I used Dr. Fitzgerald's method and she left the chair not at all worn out or weary as usual, and the cavities were not easy ones, I can assure you. When she got through and went out of the office she said: "Dr. Riggs, dentistry has no terror for me in the future if you can do as well as that." I had a high-strung boy who was not at all well. I operated on him and he told me it hurt, but he said it was bearable. I do not know what further testimony I can give you. I might go on and relate instance after instance of grown people and children; you cannot fool a child very much. When these people have taken my treatment and have not complained I am sure that I am successful with it.

We are indeed glad to have Dr. Riggs with us
President Gelston. this evening to open the discussion, as Dr. Riggs is the President of the Connecticut State Dental Society and we are especially honored. I will now ask Dr. William J. Hogan, Hartford, Conn., to continue the discussion.

Perhaps next to Dr. Fitzgerald I have followed
Dr. William J. Hogan. this work most closely. In regard to anesthetizing for the extraction of teeth I want to say that I have had a great many physicians and dentists for whom I have extracted teeth, and it is not my hobby by any means; rather it is something that I very much dislike. I have had one patient who was to have had ten teeth extracted. That patient has had gas administered four different times for the purpose of extracting those teeth and each time she became so hysterical that I was unable to do anything for her under gas anesthesia. Eventually under reflex pressure anesthesia and in the presence of three physicians I extracted those teeth. The only thing to remember in this work is to avoid soft parts and to work on the hard parts and there you can work with perfect success. One doctor from New Haven came up with a patient suffering so severely from pain of the face and so continuously that they were unable to drive it away. Even the effect of drawing her veil down over her face would give her



extreme pain. I think in seven minutes I was able to relieve that patient from pain, and she told me that for the first time in eight months she was able to use a handkerchief comfortably. I am not a talker but tomorrow I will endeavor to be a demonstrator, and I think I will then be able, more forcibly, to convince you of the virtue of reflex anesthesia.

We are indeed honored in having Dr. Hogan
President Gelston. with us this evening as he is the President of the Hartford Local Dental Society. I will now ask Dr. B. A. Sears, of Hartford, Conn., to proceed with the discussion.

It is with great pleasure that I meet with and
Dr. B. H. Sears. greet you. Reflex anesthesia is creating a worldwide question in the minds of the members of the medical and dental professions as we in Hartford can assure you. We have letters and postal cards and communications from all parts of the country asking how we do it. We are here to tell you how we do it, and not only here to tell you how to do it, but we are here to show you how we do it. I do not know that there is anything that will interest you more than some of the little instances that have occurred in my practice of extracting. One case which interests dentists particularly is one of an impacted wisdom tooth which a young lady of thirty-eight years said she had been troubled with for eight years. She had been to three or four gentlemen, one in New York, one in Newark, one in Boston and one in Buffalo, and also to other specialists in regard to removing that tooth, but she did not want to take an anesthetic. She said she would not take an anesthetic and she also said she had never been put to sleep by any man and she was not going to be put to sleep by any man.

Gentlemen, I got that wisdom tooth; I have her word for it and she says that if she has ever another tooth to be extracted she is going to hunt me up. I worked for her thirty-five minutes and I sweat—not perspired. I applied pressure on the inside of the jaw with my right hand like that (indicating) and I held it about three minutes. I made a very sharp incision and removed the gum tissue. I excised the gum about one-half of an inch and had my assistant hold the flap back. I was not in a hurry. I used an elevator and I got it in thirty-five minutes. That is only one case and there are many others to which I could allude.

We have with us Dr. James Lawton, of Midd'e-
President Gelston. town, Conn., whom I will ask to continue the discussion.

Mr. President, Ladies and Gentlemen: I first
Dr. James H. Lawton. became aware of this method of anesthetizing teeth on the twenty-first of April, at the Connecticut State

Convention. The next day I went home and on that day a lady brought a small boy into the office who had a badly broken down first molar in the lower jaw, left side. I seized this finger (indicating second finger) and I pressed it for three minutes, and I seized the cheek, just opposite the first molar, and I squeezed that for two minutes, and the boy looked up and said the pain was all gone. He left the office and went outside and sat in the reception room, and he took his tongue and ran it around that point and after a little while the pain started up again. His mother then said: "I guess you had better take that tooth out." I gave him anesthesia pressure again and took his tooth out and he did not feel it. This was my first experience. My second experience was the case of a man who had a bridge put in on the left side above, from the first and second molar to the first bicuspid. He was suffering from headache. I relieved the headache by pressing to the left on a line with the palate, and I pressed the cheeks opposite. I also pressed the corresponding finger. After pressing them for some time I went to work. The patient did not feel it; he said there was no pain at all; in fact, he hardly knew what was going on and began to talk, and after I finished grinding and his tongue touched the instrument he said: "By Jove, that's hot." That was the first he knew of it. There is another case of a boy four years of age whose mother brought him into my office at about eight o'clock. I was just about closing up the office when they came in, and the mother said the child had had a bad toothache in the second molar for some weeks. The pulp was exposed. I did the usual things; I packed the tooth with some medicine which quieted it temporarily and let him go. Later on a lady in the drug store said the child was crying very hard and the tears were rolling down his little cheeks. His mother said it was still his tooth aching him. I walked over and I sat down on the chair and I seized his finger on the same side where he had the toothache, and I pressed it like that (indicating a pressure with thumb and fingers back of the knuckle of the second finger), but the boy continued to cry; but suddenly he looked up to his mother and laughed. "What is the matter?" his mother asked him. He said: "Why the pain has stopped." I met his father twenty-four hours afterwards and I said: "How is the boy?" He said: "He has not felt the tooth since you saw him."

President Gelston.

I will ask Dr. Fowler to address you.

Dr. Henry Fowler.

Shortly prior to the meeting of the Connecticut State Dental Society, in April, I read an article in one of the New York papers concerning this new discovery, and it appealed to me as being something new which I myself had experienced, in a way, but not in this direct connection. I had discovered or had experienced by the hanging of my arm over a chair



the feeling of a perfect anesthesia in my hand. A great many of you, perhaps, have felt the same thing but you did not connect it as it has since been connected. Since that time I have thought that there must be some relation in that experience with the discovery made by Dr. Fitzgerald, as his work has been described, and it appealed to me as one of the new things coming out, and I made a special trip to see the work that was announced to be done by the Connecticut State Dental Society. What you have seen described here on the screen is what I and other men actually saw. Dr. Hogan was the man, and I think there were a half a dozen pins stuck in his arm, and this much any of you know would not be done for fun. I also had the pleasure and inspiration of seeing teeth removed with no reflex action at all by this same pressure not only by Dr. Hogan but Dr. Sears also. There were several cases of headache relieved during that convention by the various men who are here to-night. New Jersey dentistry has taken a new stand in the medical profession. The State of New Jersey recognizes that we are progressing, that we are reaching out into fields of discovery which relieve suffering humanity. We are opening up new fields for other states to follow, and it is a matter of a great deal of pleasure to us that we have here with us Dr. Fitzgerald, and you will see his demonstration to-morrow. At the present time you are likely to be skeptical, but as you go home from this convention perhaps there is not one dentist here but will be apt to be impressed with the idea that we have produced very, very satisfactory results in not only adding to practice a new discovery for the preparation of sensitive cavities, but which also will be apt to be put in practice in the extraction of teeth.

President Gelston. Does anyone else wish to discuss Dr. Fitzgerald's paper?

Dr. H. J. Kauffer. I think it is most wonderful the testimonials which have been presented and the work that has been accomplished. I have every reason to wish to compliment Dr. Fitzgerald on his work. I would, however, like to ask a few questions. I have enjoyed so much what I have heard that I want to hear more.

I would like to know whether I understand correctly that anesthesia is produced by pressure when the pressure is brought at the periphery of the zones, and if pressure brought at this point produces anesthesia throughout the entire zone. I would like to ask Dr. Fitzgerald as to his statement of pressure on the stomach and of a goitre being relieved by this pressure. Does this pressure cure the malady or in what way does Dr. Fitzgerald account for the loss of the goitre and the disappearance of the pain?

President Gelston. Does any one else wish to discuss Dr. Fitzgerald's essay?

Dr. Theodore Blum. Mr. President, I certainly was very much interested in the paper, and I must confess that I do not know anything about the method and I shall not contradict any of the statements that are being made. As far as pressure anesthesia is concerned, a good many of you think it is new. That is not so. It is very much older than the oldest man in this room or probably than the added age of two or three men put together. It has been done years and years ago. A statement was made by one of the specialists in regard to the relieving of pain in the lower jaw by pressing on the anterior dental nerve; that is nothing new at all. Pains have been relieved by this pressure, but it needs a longer pressure to get anesthesia. Curing goitre by pressure is absolutely against my knowledge of medicine, and while I am one of the youngest men here, as I have only spent about ten years in the medical and dental field, I cannot believe that curing a goitre by pressure is possible; nor any other infection. These organic diseases are diseases caused by infection, and if we would try to treat infections in any other way than that which we have now, we would have to throw over the work of men like Koch, and all the work that Pasteur has done; and so you see this is very difficult for anyone of us, and certainly for me to accept, after hearing this talk just one hour for one evening. I have heard men say that they had relieved pain by pressure and that is nothing new. We must not forget that we do not want to relieve pain just to make a patient comfortable. Any pain has a cause. It is a principle not only in medicine but in dentistry to treat the cause of the pain. There is no particular merit in relieving the pain alone. We can relieve pain with cocaine or with any other dope. One of the men mentioned the case of pain in the jaw of a little boy and of having put medicine in this cavity with which it was relieved for a time, and then the pain again returned. Afterwards this exposure and this pain from a dying pulp was relieved by the manipulating of, I think, the phalanx of the middle finger. This is certainly beyond me, and I must say so openly. I was very glad to hear the paper, but I must see very much more before I accept it.

President Gelston. We have been glad to hear from Dr. Blum. I will call upon Dr. Smith to say a few words.

Dr. Smith. Mr. President, I have listened to Dr. Fitzgerald's paper with a great deal of interest, but I must coincide with Dr. Blum, that it is certainly contrary to all our former teachings. I, however, am open to conviction. I would like to ask Dr. Fitzgerald this question? He illustrated a case

where the patient, a child, was operated upon and he brought pressure to bear upon the hard palate and relieved the tension and pain. I would like to ask him what would be the result where the patient is wearing a plate and where the suction was great, bringing pressure to bear upon the parts. I am going to be a subject for the clinic, if I am permitted, and I am going to ask these gentlemen to perform some operation of this character. If they can accomplish the effects claimed, as presented to us here to-night, I think it is a great thing, but "I am from Missouri."

I have listened to Dr. Fitzgerald's paper and to **Dr. Walter F. Barry.** this discussion with a great deal of interest and I have tried to remain seated. I intended not to have anything to say, and I will be very brief in what I have decided to say. I happened to be in Hartford with Dr. Fowler, last April, and heard Dr. Fitzgerald read his paper then, and I saw Dr. Sears and Dr. Hogan work there. I want to tell you that I went to Hartford after hearing a lot about this pressure method of anesthesia, with the idea in my mind that it was nonsense. I made up my mind that I was going to find out as much as I could at Hartford. Dr. Fowler and I took in as much as we possibly could between the two of us, and we said we would find out about this ourselves. We proceeded to a secluded portion of the room and took a dental chair. I was the operator and Dr. Fowler the victim. I proceeded to anesthetize the region of the upper right central according to the methods shown by Dr. Sears and Dr. Hogan, and after that I endeavored to anesthetize Dr. Fowler's gum tissue in that region. We found that we did not have any instrument to test it with so we selected his stick pin, and I stuck this pin into Dr. Fowler's gums. Believe me I did not spare him any; I forced that pin through his gum tissue all the way into the alveolar process and drew blood each time without interfering with Dr. Fowler's happiness; or, at least, he did not feel any pain because he did not move. I am a firm believer in the fact that this method will work wonders in certain lines, but I certainly do disagree with some of the speakers that have addressed this meeting, and with some of the statements that have been made here to-night in regard to certain possibilities of reflex pressure anesthesia. One of the gentlemen said that he could cure toothache with pressure anesthesia. He will have to show me how he can cure a pathological condition, such as a putrescent pulp. You cannot cure that by pressure nor can you kill the germs with all the pressure that was ever secured.

Whether it is pressure or not that goitre disappeared; after working on the woman for three weeks or a month the Doctor showed her what to do and she went home and followed out Dr. Fitzgerald's orders, and the goitre

disappear. Why? The goitre has disappeared, it may be from pressure or something else. Some are more sensitive than others. I do believe that we have a wonderful discovery and I know that we have secured wonderful results. I will not say that I understand the principle, because I do not. I only tell you of the results I have achieved.

I do not want to throw any doubt on what has been accomplished. I merely want to say that there are all kinds of goitres; there are at least half a dozen different kinds of swellings in the neck which are sometimes called goitres, and they are not goitres at all. I do not want Dr. Fitzgerald or Dr. Hogan to think that I am doubting that they obtained these results, but what I do say is that I would like to see it.

We are familiar with the old quotation, "All men are liars." I have said before that there may be some who take exception to this method and who doubt pressure anesthesia. I know they will probably see it demonstrated a great many times and still say it is simply impossible. If that is the case with you, it is no more so than it was with me. I could not believe it at first. "I do not care whether you come from Europe or from Africa or from North America. I do not believe it." That is what I said when I first heard it. It was three months before we got together; it was three months before they got me to see Dr. Fitzgerald. I do not blame these men for asking to see what can be done, but bring the cases forth and we will show you what we can do. We do not claim that it is absolute anesthesia in every case. Perhaps in twenty-five per cent. you can get absolute anesthesia and in seventy-five per cent. analgesia. We have not anything to sell; we have not any books nor any pamphlets. If you want to go on with your experiments it is up to you; if you do not, drop it, and it will not cost you a cent.

Gentlemen, this pressure may be taken up from any bony prominence along the ends of these particular zones, perhaps in one place just as well as in the other. Naturally it is better, ordinarily, to work from the fingers, than it is from the elbow and from the shoulder or from the spine or the knee.

As to goitres: There are goitres and goitres; we will all admit that, and there are cancers and cancers and we will admit that also. I have shown you on the screen to-night about the pressures, and I have shown you this huge goitre on this woman sixty-three years of age. We have had them a number of sizes down to the size of the smallest. Here is her testimony and she is feeling well. We have in the first place felt that it was unfortunate, most unfortunate, that this announcement ap-



peared through the daily press. But that was not my fault. I have tried for two years to get my associates interested in it. I have written for certain medical papers, and I am a member in good standing of the medical societies, and I have been associated with doctors trained in Vienna and in England, and have worked with the best men over there, in my own particular line, and I have had exceptional advantages and opportunities, but I do not want you to believe that I am considering myself for a minute as being better than the great Professors of Vienna or the great professors and physicians of any other city. My training has been a good one, and I have had an exceptional acquaintance, and I have spent two and one-half years at the Boston City Hospital with the celebrated men there, and as I have already said I am in very good standing in many of the medical organizations. I went to Dr. Steadman, editor of the *Medical Record*, perhaps three or four months ago, and I said to him: "Doctor, you have not answered any of my communications." I had written to him and he was familiar with the matter. "They are ridiculous," he said, "you cannot expect us to believe that stuff." "Well," I said, "I do not blame you in the least. I do not blame anybody: Dr. Sears said he was skeptical at first and I was myself." I saw Mr. Wood and Mr. Wood said he was interested and thanked me for coming down, but he said: "It is too radical and from a financial point of view it would not interest us."

That is the point of view; it is the financial point of view. We are not saying that this is a cure-all, a panacea, but is it not a beautiful thing to demonstrate to you as members of the dental profession and as members of the medical profession, largely, that we can trace a connection from a molar tooth into the hands or feet? Is it not a beautiful thing, for instance, to trace a connection from the tongue into a malignant growth in the breast as we are able to do? These patients demonstrate it themselves. The medical profession want me to give them a theory on this. We know that we get a relaxation. We have demonstrated this in one of the largest clinics. I am not trying to make myself ridiculous or to treat by methods which seem ridiculous. We are using a method that is meeting with success. Dr. Sears and Dr. Riggs and Dr. Hogan all were skeptical and refused to believe, and to all of them it appeared ridiculous until they tried it. As Dr. Hogan says: We are not here to sell you anything, but we are here to give you the benefit of a little experience which we have had, and during the next one or two years ago, I suppose, we will go on with nitrous oxide gas and other agents, and I do not care, but I am able to prove with what we have already done what the Boston men said was absolutely impossible: We are able to trace from the throat a connection into the great toe or heel or into the end of the fingers. That seemed ridiculous to

them and how ridiculous it must seem to these same men when we can anesthetize from the finger or from the toe by pressure sufficient to extract a tooth without pain.

Reflex pressure anesthesia is brought about by grasping the second phalanx of a finger or a toe between the thumb and finger of the operator and holding it firmly close to the distal end for about one minute. During this time the grasp is on the lateral aspects. Then for another minute you press similarly upon the dorsal and plantar aspects. The degree of pressure is not painful. The patient promptly says that the finger feels numb and traces of numbness extending gradually upward the entire height of the body. When the numbness passes the location of the pain and suffering ceases, and when the area to be operated upon by dentistry or minor surgery is reached by the numb wave, surgery may be instituted without pain. The right hand or foot of the patient for the right lateral half of the body above, and the left for the other side. The thumb will anesthetize the two incisors on their own side; the forefinger the first bicuspid; the second finger the next two; the third finger the next and the little finger the last ones. These anesthetics always proceed upward. Use the thumb and fingers for dental work. It does not make any difference whether the pressure is applied to fingers or other parts of the body provided it is made upon any bony prominences. There is no bony prominence which will not give reflex pressure anesthesia upon pressure, the duration of which is from one to three minutes and which anesthesia lasts for about a half an hour, although the pressure can be repeated at any time, if necessary. Operators unfamiliar with the technique may not get the result at once, and should persevere until they do; it will never fail if it is correctly administered.

I am a member of the medical profession and I believe in medicine, as far as it goes, and I believe in everything that promotes health and improves conditions with which we are all meeting from day to day. I am willing to keep on experimenting for the good of the cause of humanity generally. I am not afraid of the criticisms of any of the professors in Europe or out of Europe, and that does not mean that I am putting myself above or on the same level with them as celebrated men. They know their work as far as it goes and I know mine, and they will know of my work still better ten years from now. Of that I am sure. I am not a hypnotist. We know perfectly well, as the Boston man said, that you are conscious, but you are unconscious of pain, and to that degree we are all hypnotists. If a physician can operate without pain or extract teeth or take care of cavities in the teeth without pain with this method, why should we not wish to do it? In ten years from now we will be able to read the affected portions of the human body from pressure on the tongue as the palmist reads the palm of the hand.



I do not claim to know the theory and I do not claim a universal panacea, and we do not know that we will know the theory as long as we live, but we do know the clinical results, and we know the A. B. C. of the discovery as far as we have gone, which we demonstrate, and that is what we are here for.

I could speak on this to you for two weeks but I am convinced that Dr. Sears and the other doctors here will be able to demonstrate, no doubt, many unbelievable things for you to-morrow.

Dr. Fowler. Moved that the society give Dr. Fitzgerald a rising vote of thanks for his attendance at this meeting and for his lecture. (Carried.)

Dr. Slade. Moved that a rising vote of thanks be extended to the gentlemen from Connecticut who discussed the question. (Carried.)

On motion, adjourned.

Morning Session, July 17th, 1914.

The meeting was called to order by the President, and after the transaction of routine business, the President called upon Dr. Fowler to introduce the essayist, Dr. Harold Clark, of Toronto.

Dr. Fowler. Mr. President and Members of the Association: Among the important things in the dental profession is that of their relationship to the general health, and by placing us on an equal footing with themselves by the recognition of the dental profession of the State of New Jersey, the medical profession has admitted the part that the dentist plays. The services of the dentists are constantly being called in to the assistance of the medical men and now we have the one case of recognition in our State by the medical profession. In our essayist to-day we have another. Dr. Harold Clark, of Toronto, Canada, represents this particular phase of the question, and I take very great pleasure in introducing to you Dr. Clark, who will speak on "The New Gospel of Health According to the Dentist."

Dr. Harold Clark. Mr. President, Ladies and Gentlemen: I want to thank you for the honor that you have done me in giving me a place on your program. I have been in practice for over twenty years, and I have learned to take a great deal of interest in the proceedings of the New Jersey State Dental Society. We look for epoch-making papers and the recollection of what I have read of the papers presented here, gave me many misgivings about ac-

cepting the invitation that was sent to me by the Chairman of your Program Committee. I am sorry that Dr. E. C. Kirk is not here, for he is fully responsible for my being before you to-day. He wrote a paper and read it in Toronto last year, and he and I have had a great many conversations and a great deal of correspondence, and in some way he gathered the idea that I might be able to read you a paper on a subject that I have worked upon, although it is one that should be handled by men of science and by laboratory men, whereas I am like most of you: just an ordinary, busy practicing dentist, but the subject is one that has always been of great interest to me.

(Dr. Clark's paper was published in the February issue.)

Discussion of Dr. Clark's Paper.

In his paper, Dr. Clark refers to two theories
Dr. Otto E. Inglis. which to my mind are incompatible.

The theory of Williams is that the acid forming bacteria form plaques at sheltered spots, and are the active agents in producing lactic acid which decalcifies the tooth beneath the plaque, the process proceeding from this initial starting point. Miller did not indorse this view but favored the idea that the bacteria found in the mass of carbohydrate produce the lactic acid in such mass, the acid then acting upon the tooth.

Pickerill indorses Miller's view, claiming in his book, *Prevention of Dental Caries and Oral Sepsis*, 2nd ed., page 24, that such a plaque as claimed by Williams "would tend to constantly dissolve its base of attachment," though on page 23, he shows that a film of bacteria (plaque) may be shown even upon an area of arrested caries, in which case presumably the plaque does not tend to dissolve its base of attachment.

Now Williams always found these plaques so attached to superficial caries of enamel that he could grind them *in situ* and demonstrate them by photomicrographs. If so how could they have dissolved their base of attachment? Certainly not without a very rapid reformation.

Miller, many years ago, claimed that filthy collections upon teeth often act as a protection from caries, though pyorrhetic conditions might arise. The reason given was, that the bacteria and food were gummed to the teeth (probably by mucus), and that while the first mass might form acid its capabilities in that chemical direction were soon exhausted, whereupon putrefaction set in and with its alkaline reaction the mass would either act as an inert or possibly a neutralizing barrier to the access of future masses with their acid producing capabilities which in turn would become putrefactive and thus thicken the mass.



To my mind Miller by this argument practically substantiates the theory of Williams. The difference between acid production and caries, and alkali production and immunity, being a difference produced by the partial cleanliness of the present day which permits a plaque of acid forming bacteria to receive a fresh supply of carbohydrate and thus obviates the staleness of the medium which Miller showed in his extra-oral experiments to be the cause of the production of the alkaline mass referred to.

Dr. Clark endorses Pickerill's view and Dr. Kirk endorses the William's plaque view, hence my contention of incompatibility of theory.

Dr. Kirk does not, in so far as I understand from his writings and personal conversation with him, as yet claim finality for his theory of a soluble carbohydrate entering from the blood by way of the saliva, but rather has blocked out a line of work which may prove that such a soluble carbohydrate as a prepared food for the bacteria in the plaques, readily assimilable by them, may exist in susceptibles and be absent in immunes.

Pickerill has furnished the information that the Maori's have but one per cent. of dental caries, and he could not obtain evidence that they used any implements for cleansing the teeth. He also relates that Maori children brought under our civilized diet conditions changed to susceptibles in some degree.

Was this due to partial cleanliness permitting a renovation of the medium for acid forming bacteria or to the civilized diet furnishing a carbohydrate excess in the saliva, or to the carbohydrate diet allowing carbohydrate debris in the mouth, or to a change in the use of acid fruits? Pickerill's view is that the Maori immunity is due to the acid fruits and berries eaten under native conditions, which fruits stimulate later an alkaline flow of saliva for a long time, which saliva flowing over the teeth neutralizes the acids formed. I do not find in Pickerill's book any observations showing that a true caries susceptible has been changed to an immune by the acid fruit stimulation, though I fully admit the probable desirability and advantage of the free flow of alkaline saliva, as an aid in producing immunity.

Working as we do in communities pledged to cleanliness, it seems to me that the rational method is to endeavor to make it thorough on the part of the patient, instead of a cleansing at points which do not decay, or produce pyorrhea, and to supplement that personal attention with brush, floss and other special implements if needed, by frequent prophylaxis and by the antiseptic method when needed and later by the Pickerill method.

As an experimental method and later as a possible proven method

I wish to commend the idea of Dr. Clark that we should enter upon a campaign of observation of these matters ourselves, and the idea of appointing committees among dentists in order to get up a satisfactory diet list or other method of procedure seems to be of exceeding value. I beg to thank Dr. Clark for his paper and his expressed desire to have me discuss it.

Before beginning the discussion of this paper, **Raymonde H. Albray, D.D.S.** I want to state that I am not a pessimist, and my remarks must not be taken as indicating such spirit.

There are few statements in the paper to criticize or challenge. It is idealistic in character. I hope we will all live to see the time when teeth will be cared for as they should be, and to see a practical method of preventing dental caries in successful operation; not in individual cases, but generally employed; not for those with wealth, but for the poor as well. That the causes of peculiar susceptibility and immunity to dental caries are within a short space of being determined, seems probable to those who have heard of the research work done by Wallace, Pickerill, Gies, Kirk, Rose, and others.

The important relation which the work of the dentist bears to the health is conceded, since it has been demonstrated that arthritis, dyspepsia and other disorders of the alimentary tract, together with numerous other systemic troubles, are often traceable to unsanitary oral cavities. These findings are being confirmed by many investigators.

Infectious diseases are frequently spread, particularly among school children, by bacteria bred in unclean mouths.

This phase of the connection of the dentist with the health of the public Dr. Clark has not dwelt upon, evidently considering unclean mouths and carious teeth predisposing factors or causes of these systemic disorders. The dentist is the physician of the mouth, and when the public realizes that proper dental care will prevent many forms of ill health, then will the dentist occupy his rightful position in the community.

There can be no doubt but that the idea of prevention, as outlined by the essayist, is the ideal future for us to look to and aim to attain, but many things stand in the way of its success.

Medical Prophylaxis. The medical profession has made considerable progress with preventive medicine, as is evidenced by vaccination to prevent smallpox, serums to prevent typhoid, anti-toxins and autogenous vaccines to ward off other maladies, and by advising sanitary regulations to stamp out yellow fever, cholera, hook worm disease, tuberculosis, etc.

Health authorities have formulated laws relative to measures which



must be taken as a means of preventing certain infectious diseases, and they are invested with power to enforce these regulations.

The public co-operate with the health boards in their work, because of a realization of the penalties of sickness and death, which are often exacted from non-compliance with their rules. The medical profession has spent years educating the public along these lines.

In our branch of the profession an entirely different problem confronts us. The teeth have always been looked upon as something apart from the rest of the body, and as having comparatively little bearing on the general physical well-being. Severe illness or death is rarely attributed to tooth conditions, and yet we know that many diseases of serious nature have their inception in uncared-for mouths.

People must be educated to a knowledge of the important bearing of the teeth upon health and disease. Efforts are being made to do this, and despite the fact that it is slow work, and that it will be years before such knowledge becomes general, the ultimate result justifies the expenditure of the time and energy required. In many communities the results of this educational propaganda are beginning to show.

The great majority of people are careless about the condition of their teeth, rarely visiting a dentist except for relief from pain. Of the others, how often a patient will leave the dental office, with teeth in a good state of repair, and promise to return in six months to the minute, so as to prevent such trouble as has just been remedied; and how often do they keep their promise, even if reminded of the time with a card? A few individuals may return at the end of the six months, but usually the elapsed time between visits is nearer to six years than months, unless pain compels the visit. Why is this so? Just plain, every-day human nature. We are all gamblers in one way or another, and most of us gamble continually with our health; it is human nature to do so. We overeat, overdrink, smoke too much, overwork or overexercise, and so long as we can persuade ourselves and our friends that we look and feel reasonably well, we just take a chance and let things slide along in the most comfortable and pleasurable way. Most people treat their teeth in this manner. As long as there is no disagreeableness or pain, they take a chance, and delude themselves into the belief that everything is all right. Do you suppose if you instructed the great majority of fathers and mothers in an exact diet for their children (and it would have to begin with them), that those parents would, or could, compel a strict adherence to that diet, even if they knew positively that by so doing the child would have a perfect set of teeth? I must admit I have never seen nor heard of such parents, although they might possibly be found. I am glad mine were not of that kind. Can

you not imagine the difficulty of enforcing a special diet on a child to whom it was distasteful? With half a dozen children in a family, what a happy home it would be.

As I said earlier in the discussion, health authorities can compel obedience to certain sanitary regulations for the prevention of some diseases, but you could not enforce any regulation of diet, to act as a preventive of dental caries, if every last person on the globe were made a member of the health board. That is why I say the paper is idealistic; dental caries cannot be prevented by any such means. The effort to prevent caries will have to be a voluntary one on the part of parents and children, and education is the only way by which we can hope to accomplish the desired result.

I have been greatly interested trying to prevent destruction of the teeth by some of the methods which have been recently advocated, but in spite of bribery, threats, cajolery and pleas, I have found the majority of patients to be backsliders after a few weeks or months. Either the vinegar bottle broke or they did not like the taste, or any of a dozen excuses were offered for failure to carry out the treatment as directed. Occasionally a patient will prove an exception to the general rule, and will follow directions explicitly. I will cite one such case.

A young lady of thirteen years came to me
Case from Practice. about three years ago with her teeth in very poor condition, many cavities, saliva thick as mucilage and of great quantity.

I filled the cavities with gutta-percha, copper amalgam and copper cement, and the fillings lasted well, but every few months there was a new crop of cavities to be cared for. About a year ago I prescribed lime water, three parts, peroxide of hydrogen one part, to be used for cleaning the teeth (this is Dr. Kirk's formula); restricted her use of sugar; advised a well varied diet and outdoor exercise. After consulting with her physician I prescribed syrup calcii lacto-phosphate in drachm doses after meals. The young lady has been very faithful in following my instructions. There is a marked improvement in her health, the saliva is about normal in quality and quantity, and but two new cavities have appeared in a little over a year, and those soon after treatment was begun.

Whether this improvement is due to diet, mouth wash, restricted use of sugar, exercise, the lacto-phosphate, or to the combination of them all, I cannot say. All I know is that something has brought about a marked change in the condition which existed prior to the treatment.

I am for the prevention of dental caries and for oral hygiene, heart and soul, and am trying to do my part in spreading the gospel of tooth health in its relation to bodily health, but we have to reckon with our



old friend, "human nature," which must be considered in discussions of this kind if anything is to be gained other than talking in the air.

Other forces must have a decided influence upon the teeth than diet alone. Admitting the case of the Maori children which the essayist cited, can we lay this sudden decay of the teeth to a changed diet, when their whole mode of living was altered? If parents whose teeth show only one per cent. caries beget children whose teeth show 50 per cent. caries after a few years of partial civilization, how can we expect parents whose teeth show 98 per cent. caries to beget children with anything but teeth particularly susceptible to the ravages of caries? Could the results we desire be accomplished by diet alone? Would not heredity, mastication, elimination, exercise, and many other factors have to be taken into consideration?

Let us now look to the dentist himself. How large a proportion of our profession are practicing the very best dentistry they know how to practice, making every effort to do preventive dentistry, striving in every way to keep in touch with the latest theories and discoveries, and by applying them in such cases as they are indicated, prove or disprove their soundness? How many have read and put into practice any of the theories of Wallace, Pickerill, Kirk, or Gies? How many attend dental society meetings with regularity, and read the dental journals, trying the newer methods of which they read or hear? I will not attempt to answer these questions, other than to say that here again we have to deal with our same old friend (or enemy?), human nature. From my observations it seems that a great many of our brethren do the easiest and most comfortable thing. They forget about the dental society meetings and neglect to renew their dental journal subscriptions; in other words, they get into a rut, wear it smooth, find it comfortable, and stay there.

Lest you think I am pessimistic, yet me tell you that I believe the dental world is in the midst of an upheaval from which the profession will emerge on a loftier plane than it has yet occupied. More attention is being given to scientific investigation by our men and societies; higher standards of education are being made obligatory for the prospective dentist; many new societies for study are forming; a spirit of fellowship and fraternity is being manifested between the M.D. and the D.D.S.; and the general public is gradually becoming educated to the advisability of proper care of the mouth and teeth and demanding such care from the dentist.

The development of stronger teeth, the prevention of dental diseases and better dentistry for those who need it, by better dentists, are thoughts which must be ever before us.

I have tried to show that knowledge of how to prevent dental caries

will not suffice in actually preventing the condition. There are many other problems having an important bearing on the subject which must be taken into consideration. We can be of great service to our patients; endeavoring to prevent disease by giving the teeth of every individual the best possible attention, and by educating our patients in the importance of clean, healthy mouths and teeth.

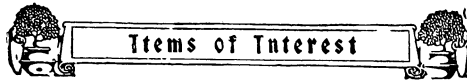
I appreciate having had the pleasure of discussing this paper, and thank Dr. Clark and yourselves.

In my estimation there should be no such thing
Dr. Vernon D. Rood. as failure for any man who has taken up the profession of dentistry. Probably he may not be successful in the mechanical field, but there are so many specialties that come under the category of "dentist," that it should never be necessary to give up the work. What a blessing to a man who finds that he has wisely chosen and gives his very soul to the saving of humanity physically, mentally, and morally. What a satisfaction to be able to diagnose and almost immediately relieve. The uncertainty of diagnosis and the too often unfavorable prognosis influenced me in my choice of a profession. What great strides we have made in the past fifteen years. We have Taggart with his valuable inlay system; we have porcelain art perfected as never before; we have Gysi with his natural articulation; we have beautiful moulds with their three-point contact; we have analgesia by Teter; mandibular and conductive anesthesia by Fischer, and last but not least, reflex anesthesia by Fitzgerald.

How eager men are to equip themselves, even spending hundreds of dollars for the study course and the mechanical device to be able to save pain for his fellowmen.

Up in Rochester it was almost impossible to get within hearing distance of men teaching analgesia and conductive anesthesia. Yet how few were interested where preventative medicine was being demonstrated. We as a profession are making a grave mistake. We should awaken from this Rip Van Winkle sleep, and demonstrate to ourselves and to the world that we have in our possession sufficient knowledge to combat all decay, and are able to keep our patients immune by carrying out Pickerill's method, in combination with rigid dietetic rules, and in so doing prevent this carbohydrate acting as a medium for the development of organisms in the mouth.

When the profession work as a unit along this one line then will removable bridgework, inlay system, impression methods with artificial articulation, analgesia, exodontia, and reflex anesthesia fade away in oblivion.



President Gelston.

I shall ask Dr. Clark to close the discussion.

Dr. Clark.

Mr. President, Ladies and Gentlemen: I must thank you very cordially for the very kind way in which you have received and discussed my paper.

There are some points in the discussion to which I should like to refer in closing.

Dr. Inglis is a college man and I feel somewhat timid in replying to some technical points he has raised, inasmuch as I am only an ordinary practising dentist, and have not had the scientific training to enable me to discuss worthily some of his statements. I would like, however, to say something about plaques. From my own experience, I am satisfied I can make or unmake plaques on my teeth practically at will. While I adhere to the regimen of diet I have laid down for myself, I think I may say my teeth will show no plaques whatever. But let me make certain modifications and in a few hours my teeth will be covered with them. I would account for it in this way: We all know that starch makes an excellent paste. Now, if saliva becomes acid it ceases to act as a digestive, converting the insoluble starch into soluble sugar. It also thickens or coagulates the mucin. If this digestive function is checked, the starchy débris in the mouth is thoroughly wetted and becomes a paste that adheres to the teeth. Whether the composition of these plaques is simply undigested starch or whether the thickened mucin forms an element in them I am unable to say. But I do know that if I indulge in sweetened starchy foods, drink cocoa and neglect fruit, I will promptly have plaques all over my teeth.

Human nature is probably much the same variety here as I find in Canada, and, in my experience, I have enough patients eager to do the best for themselves, or their children to make any educative effort well worth while. Of course, a large number of our patients are like the old roue whose physician advised him to give up wine, women and song if he wished to regain his normal health and well being. Subsequently, he complained to the physician that he wasn't much better, and when asked if he had carried out the advice given him, he replied: "Well, I don't sing anymore!" All missionary effort must be content with partial success.

Some have argued that an open air life accounts largely for immunity to caries. I have, in my recent experience, a case that has an interesting bearing on this contention. A family of several daughters includes one who is and always has been a very delicate child and almost blind as well. The others are all hearty and strong. Although the frail sister is much confined to the house, her teeth are almost entirely free from caries. The other girls all have evidence of frequent visits to the



dentist. An inquiry into the diet of the children revealed the fact that the family physician had ordered for the sickly daughter a diet that would minimize fermentation, and sugar was eliminated. The inference is obvious.

In closing I would like again to thank you for the interest and attention you have given my paper and its discussion.





The Kingsley Marble Bust of the Saviour.

Several years ago, when Dr. Norman W. Kingsley had retired from practice and was living on a small farm in New Jersey, the writer conceived the idea that it would be a fraternal courtesy if his confrères should contribute to a fund with which to purchase the marble bust of The Christ which Kingsley had modeled and chiseled, and place it where it might ever remain as a memorial to the artist-dentist. It would not only be a pleasure to the man in his declining days to see his cherished work thus recognized, but the money would likewise prove acceptable.

A circular letter was therefore mailed to those that knew him, outlining this purpose, with the result that the response was most generous, nearly fifteen hundred dollars being contributed. This sum was given to Dr. Kingsley, and shortly after, the marble was delivered to the writer with a letter authorizing him to make final disposition of it.

It would have particularly pleased Dr. Kingsley to see the piece of sculpture go to the Metropolitan Museum of Art, but the directors of that institution declined the gift on the ground that they possessed insufficient space for the proper exhibition of the statuary already in their possession, and plans for annexes to the main building for many years to come contemplated only the housing of other departments of art.

For several years, therefore, the bust has remained in the office of the writer, who constantly sought for a suitable final disposition of it,



Editorial

one that would prove satisfactory to at least the majority of those who had contributed toward the fund. Several plans were discussed with confrères, but none was evolved that did not meet some opposition, until at length Dr. Kingsley died, and at his funeral, which by his dying request was held in that church so widely known as "The Little Church Around the Corner," it occurred to the writer that as this had been Kingsley's favorite church, and just "around the corner" from his last place of practice, it might be fitting to deposit the marble in this religious edifice. This was discussed with the other pall-bearers, and the consensus of opinion was that, having been the work of a dentist, it should be placed in a dental institution. The writer then suggested that it might be offered to the Evans Dental Museum when opened, and this met unanimous approval.

Consequently, just prior to the dedication of the Evans Dental Institute and Museum, this work of art was offered to the Institute and accepted. It has been placed in the Library, and may perhaps inspire other depositories of a similar nature. It is understood, of course, that the "museum" feature of this institution was meant only as a repository of various collections and possessions of Dr. Evans, yet since the word "museum" enters into the name, it might be advantageous to amass and preserve together such objects as may in time aid in marking periods in dental progress and dental history.

The writer sincerely hopes that this disposition of this cherished piece of marble may prove satisfactory to all who contributed to the fund.

The First Model.

It may not be amiss at this time to mention an interesting incident. When Kingsley first seriously undertook sculpture he rented a "studio" and worked there alone, none of his confrères ever suspecting his allegiance to this avocation. After a meeting one night, Dr. Kingsley invited Dr. Wm. H. Atkinson and a few other kindred spirits to visit his studio. Arriving there, he lighted the room by degrees, and as the clay model slowly became more discernible through the disappearing darkness, the little group of men gazed first in curiosity and then in admiration. Atkinson was the first to speak. Stepping forward and removing his hat he exclaimed, "The Christ!"



Kingsley was delighted at this spontaneous tribute of recognition of his art, and after dismissing his guests decided to sleep, as he often did, in his studio.

About two hours later he was awakened by a loud sound, and jumping up made a light. Imagine his dismay at seeing his finished model lying face down upon the floor, where it had fallen from the pedestal. In deep grief, but with that indomitable will for which he was noted, he lifted the clay back into position, and at once set to work in an effort to restore what had been completely destroyed by the fall, the face. Day after day he worked until he finally completed the model of that which later he chiseled in the marble. The present figure, therefore, was not his original modeling, and though beautiful, Kingsley often declared that it was not so fine as the first. Yet it has satisfied thousands.

Harrison Anti-Narcotic Law.

The following is a communication obtained by one of the State Board of Examiners in order to determine the status of dentists applying for registration under the Harrison Anti-Narcotic Law. The attorney consulted investigated the matter and then wrote as follows:

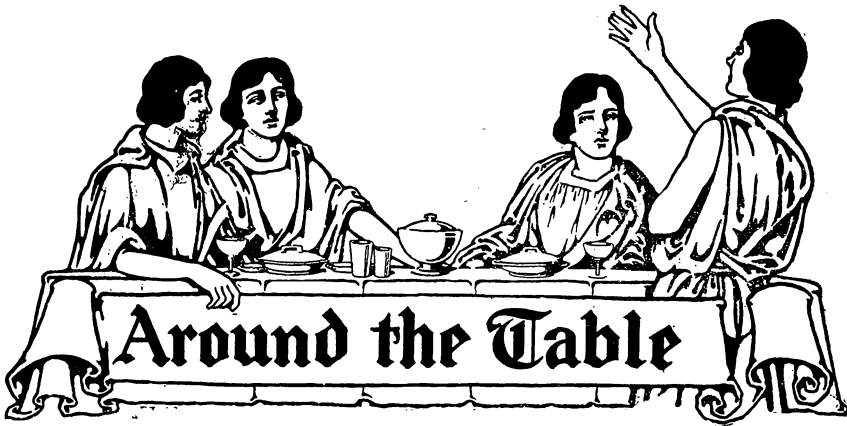
"We are just in receipt of a letter from the Collector of Internal Revenue advising us that, as suggested in our letter, the Commissioner of Internal Revenue has ruled that the terms, 'legitimate practice of his profession,' as used in the Harrison Anti-Narcotic Law, require that a physician, dentist or veterinary surgeon, in order to register under the provisions of this law, must have complied with all of the laws of the State in which such physician, dentist or veterinary surgeon resides.

"Yours very truly,

"(Signed) ARTHUR H. MANN,

"(Counsel)."

It is suggested, therefore, that State Boards of Examiners could render assistance to the Collector of Internal Revenue by furnishing him their records of legal practitioners of dentistry.



LAST MONTH, in the editorial, I propounded a problem and invited a solution. I asked the question in the editorial because I wanted to give it a prominent place, where it would attract attention. Apparently I exhibited poor judgment; perhaps after all the editorials do not attract so much attention as editors are prone to believe. "Be that as it may," as one of our comedians puts it, this particular question in this particular editorial does not seem to have elicited any great plethora of replies. I had supposed that Uncle Sam might have found it needful to put an extra postman on our route to bring me the letters from the thousands who knew the answer. But no! Either the professional answerers are busy over the war problems, or else they do not know the answer to this particular riddle. But that can't be, can it? There is always some fellow, somewhere, who knows the answer to anything!



IF THERE IS SUCH A FELLOW he has not taken his pen in hand, or his typewriter girl, as the case may be, to forward to my address the solution for which so many are waiting. Up to date no one has taken the least notice of that editorial. Not one single (nor married) man has sent in even the faintest semblance of an answer. And I had counted on a real live table talk over it. But I am not to be thwarted! As you shall see!



FIRST THOUGH, just to refresh your memory, and to reopen the subject, as it were, let me briefly put the query. Dr. Hartzell, and others, claim that improperly filled root canals may result in infections, which later may taint the entire system, possibly resulting in arthritis, stomachic ulcer, and a few other little troubles which unfit a man for business, and discourage women from attending the regular weekly sessions of the "Sister-Susie-Soldier's-Shirt-Sewing Circle." Dr. Best and others follow this up with the statement that the only certain way of being certain that you have certainly filled a root canal is to take "before and after" pictures with the X-ray. "And if you do not believe this," says Mr. Radiographer, "just send one of your old root canal fillings around to



Items of Interest



- ❖ my office, and I wager you will not show the picture to the patient."
- ❖ Lastly comes Dr. Average Dentist, and he it is who asks the question:
- ❖ "Admitting that it is best to use the X-ray in connection with root
- ❖ canal work, please Mr. Radiographer, Dr. Hartzel, et al. (whoever they
- ❖ are) tell me how I can do it for patients whose limit for filling a tooth,
- ❖ from foramen to occlusal surface is five dollars, and in some cases
- ❖ three dollars?"

❑ ❑ ❑

THERE IS THE QUESTION! What is the answer? Thus far from the

- ❖ North not a sound. From the East silence. From the South not a
- ❖ letter. And from the West not a syllable. But as I said before, I am
- ❖ not to be thwarted! There must be an answer, else the Average Den-
- ❖ tist must continue to infect patients because of his inability to use radio-
- ❖ graphy, inclusively with his other materials and work at five dollars
- ❖ per tooth.

❑ ❑ ❑

THIS TABLE where I am sitting is not a supper table in a gilded hotel

- ❖ palace, nor in a gorgeous rathskeller. Still it is a table. My writing
- ❖ table. And at my right hand is my telephone. With a telephone you
- ❖ can get some sort of answer from somebody—sometimes. So here goes!

❑ ❑ ❑

"HELLO, CENTRAL! GIVE ME LONG-DISTANCE. Hello, Long-dis-

- ❖ tance, give me Hartzell, in Minneapolis. What is that? Of course you
- ❖ do. You must know Hartzell. Why he is the man who threatens you
- ❖ with arthritis if you do not have your dentist fill the roots of your
- ❖ teeth properly. Yes! Yes! Thomas B. Hartzell. I was sure you knew
- ❖ him! Hello, Hartzell. Glad to hear your voice. Called you up on the
- ❖ everlasting question of root filling, or the question of everlasting root
- ❖ filling, whichever you prefer. Did you read my last editorial? Yes?
- ❖ Good! Well, then, why the deuce haven't you answered it! Have not
- ❖ had time? Too busy? Why don't you know it is only the busy man
- ❖ who ever finds time to do things? Well, then! Answer it now, and go
- ❖ slowly, because I am no stenographer, and I won't have time to send
- ❖ proof to you." This is what he said:

❑ ❑ ❑

THOMAS B. HARTZELL. "My own attitude in regard to this matter, in

- ❖ brief, is this. Do the very best root canal work that you can in each
- ❖ case, and check it up by a radiograph. If the radiograph shows that
- ❖ your root canal is imperfectly filled, make regular examinations of that
- ❖ area by radiography, from time to time, and if the tooth in question is
- ❖ found to be infected at any time, extract it. My feeling is that we should
- ❖ not run the risk of infection from badly filled root canals if we know it,
- ❖ and that rather than to expose the patient to the risk of constitutional
- ❖ infection from such badly filled root canals, we might better sacrifice
- ❖ the tooth. This is not to be interpreted, however, as a recommendation
- ❖ for the wholesale extraction of all dead teeth. We may be compelled
- ❖ to come to that in time, but we should not jump to the conclusion that
- ❖ it is an absolute necessity, until further research work has been done,
- ❖ which will settle beyond doubt what our line of action should be, in
- ❖ order to be fair to the patients who entrust themselves to our care."



WE CANNOT DISPUTE THAT, can we? But it does not help Average

- ❖ Dentist and his five dollar patients much, now does it? Well, let us try
- ❖ again. Friend Callahan, he of the "acid reputation" (joke not original),
- ❖ has been working in root canals so long he ought to know just what it
- ❖ is worth. Hello, Long-distance! Hello! Stay right on the job. I am
- ❖ not half through with you. Give me Callahan. Of Cincinnati? Of
- ❖ course. Thought you would know him. Hello, Callahan! What is your
- ❖ answer to the problem in my last editorial. What's that? Got it all
- ❖ written, but not mailed? Good, you dear old dependable. Read it to me
- ❖ please. Which he did.

☐ ☐ ☐

J. R. CALLAHAN. "What to do with root canal work where the patient is

- ❖ not able to meet a reasonable charge by the dentist is a question that
- ❖ I cannot answer in anything like a satisfactory manner. The filling of
- ❖ a root canal is easy, quickly done, and costs little time or effort. The
- ❖ treatment, as a rule, is rather simple also. It is the preparatory steps,
- ❖ the canal preparation, getting through to the seat of the inflammation,
- ❖ that costs. And so long as we believe it necessary to establish aseptic
- ❖ communication with the seat, or possible seat of infection, the expense
- ❖ will continue to be prohibitive for people of very limited means."

☐ ☐ ☐

CERTAINLY A PESSIMISTIC PRONUNCIAMENTO FOR THE POOR.

- ❖ Well, let us not despair. We will ask another man. Long-distance,
- ❖ give me Buckley. J. P. Buckley, of course! Who else do you suppose
- ❖ I would approach on this subject? What is that! Why of course I
- ❖ thought you were listening. That you Buckley? Answer my last edi-
- ❖ torial please!

☐ ☐ ☐

J. P. BUCKLEY. "The gentleman who wondered if you would extract a

- ❖ central incisor in the mouth of a young girl simply because the root was
- ❖ not properly filled, should remember that there is no reason why a cen-
- ❖ tral incisor root canal should not be properly filled. The question of
- ❖ fees for this work can hardly be eliminated, and yet it is one which each
- ❖ operator must settle for himself. All work should be done with the
- ❖ same care and respect for detail regardless of the fee."

☐ ☐ ☐

WHICH IS TRUE, BUT ALTRUISTIC. Fearing I might be using the

- ❖ wrong word I pause here and look up altruism. Dictionary says that
- ❖ altruism is "benevolence for others regardless of self interest." So I
- ❖ guess I used the word correctly. There is a gentleman up in Ann Arbor
- ❖ whose views I know will be welcome to you all. Long-distance, get me
- ❖ Dr. Bunting.

☐ ☐ ☐

DR. RUSSELL W. BUNTING. "The question of fees to be obtained for

- ❖ root canal work involves the social and ethical factors of the case, which
- ❖ can have no set rule. We know that the same operations for appen-
- ❖ dectomy, hernia, etc., which are done in leading hospitals by a corps
- ❖ of doctors, nurses, and attendants, are being duplicated every day by
- ❖ medical men who are working alone under most adverse circumstances,



- ❖ and without the hospital accessories. We will grant that in the long
- ❖ run the chances for success will be vastly in favor of the men in the
- ❖ hospital, but the other class of practitioners are doing a great work and
- ❖ saving many lives. The matter of fees and practice must then be in-
- ❖ dividual and should be determined by attending circumstances. The
- ❖ main issue is surgery, good surgery; the best we can give."

❑ ❑ ❑

AMEN TO THAT SAY I. But that five dollar fee crowd are still unserved.

- ❖ Well, I think I may catch one more man before bedtime. Long-dis-
- ❖ tance, Dr. Best please. Minneapolis, of course.

❑ ❑ ❑

DR. ELMER S. BEST. "I cannot see how your question can be answered

- ❖ outside of the office of each dentist concerned. If a dentist knows that
- ❖ it is a choice of doing compulsory charity work or probably an imper-
- ❖ fect operation, he must decide according to his own best judgment. If
- ❖ his clients cannot pay for such services as they should have, I think the
- ❖ dentist fulfils his entire obligation when he explains the situation frankly
- ❖ to his patient, leaving him to determine whether to have the proper ser-
- ❖ vice and pay the fee, risk an imperfect operation and possible systemic
- ❖ infection, or have the tooth extracted. As a closing commentary I would
- ❖ say that a recent examination of the index of our X-ray department
- ❖ caused a great shock to me, as I found such a startlingly large percent-
- ❖ age of improperly filled roots which had resulted in necrosis. This has
- ❖ forced me to believe that the handling of tooth pulps, their conservation
- ❖ or removal, and the treatment and filling of canals, is the most im-
- ❖ portant problem confronting the dental world to-day."

❑ ❑ ❑

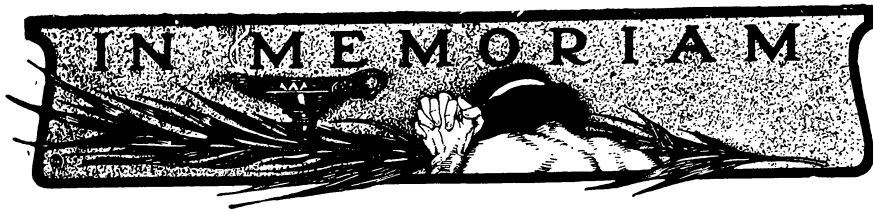
WELL WE HAVE THIS DISCUSSION started anyway. I do not exactly

- ❖ think that any of these gentlemen have helped Average Dentist very
- ❖ much except to increase his determination to do his best regardless of
- ❖ fees. But the trouble is we cannot always do our best regardless of fees.
- ❖ The man who tries to do that would need to be a multi-millionaire, be-
- ❖ cause a dental practice will always grow along the lines of least resist-
- ❖ ance. Let any man install a radiographic outfit, and then give time
- ❖ and conscientious skill to root canal treatment regardless of the fee, and
- ❖ he surely will soon be inundated with that sort of work. And he will
- ❖ find himself in the position of the rival broom makers. Each reduced
- ❖ prices till one was selling below the actual cost of production. His
- ❖ competitor asked: "How can you sell below cost?" And the reply was:
- ❖ "Think of the tremendous volume of business it will bring me?" And
- ❖ the more experienced man thought, and he shuddered.

❑ ❑ ❑

BUT LEAVING THIS subject of brooms, however clean they may sweep,

- ❖ and returning to the question of the proper care of root canals at low
- ❖ cost, I do wish that many besides those that have contributed to this
- ❖ night's telephone discussion, would ponder upon the problem and pro-
- ❖ pose a solution. For there must be a solution. It cannot be that den-
- ❖ tists must continue to do a style of work which our best-informed men
- ❖ tell us is a menace to the health of the patient, merely because the
- ❖ patient is not a wealthy man. Indeed, in a glimmering sort of way a
- ❖ possible solution has occurred to me, and if no better one is offered
- ❖ soon I may expound it.



Dr. Ralph E. Luther.

Died February 12th at St. Luke's Hospital, Chicago, Ill., from pneumonia, in his thirty-ninth year, Ralph E. Luther, D.D.S., of Batavia, New York.

Dr. Luther was born in Warsaw, October 26, 1876. He was a graduate of the Warsaw High School and the Dental Department of the University of Buffalo, class of 1900, and in September of the same year commenced the practice of dentistry in Batavia.

He was married to Miss Marion Duncan in 1901, and is survived by his wife, two sons, Duncan and John; his mother, Mrs. Mary E. Luther; two brothers, Kendrick, of Syracuse, and Guy S., of Schenectady, and a sister, Mrs. Roy McGregory, of Batavia.

Dr. Luther was a charter member of Mu Chapter, Xi Psi Phi Fraternity, and had served as Deputy Supreme President. He was a member and past president of the Eighth District and Batavia Dental Societies, and a member of the Dental Society of the State of New York, and chairman of the Committee on Oral Hygiene, the National Dental Association, and Rochester City Dental Society. He was also a member of the Masonic Fraternity and various other local organizations, but was particularly active in affairs of the Young Men's Christian Association and boy scouts, where he rendered much valuable service by his untiring energy and enthusiasm.

Dr. Luther took a prominent part in matters connected with oral hygiene, and was one of the pioneers in the work in this State. He has made a specialty of pyorrhea work, and just prior to his death had completed a course in Chicago. Dr. Luther was a man of fine ability as an operator, and gave much promise of a brilliant future. He was an upright, conscientious, high-class professional man, one who observed all the finer rules of conduct toward his patients and the profession. He was a splendid type of a high-toned professional gentleman. In his death the profession loses an intelligent, able and indefatigable worker, and his family and friends a kind, generous and lovable companion and friend. His loss will be mourned by a large circle of friends and acquaintances, who honored him for his many attractive qualities of heart and mind.

H. J. BURKHART.



Dr. E. S. Holmes.

Dr. Ezra S. Holmes, said to be the oldest dentist in Michigan, died in the Reed's Lake Sanitorium, November 11, 1914, age 95.

He had been a resident of Grand Rapids since 1865, moving to that city from Lockport, N. Y.

He was born in Niagara County, N. Y., July 15, 1819.

He opened an office in Grand Rapids more than half a century ago, being associated with the late Dr. L. A. Rogers. Throughout all that period of his practice he was considered one of the leading dentists of the city, and one of the foremost members of his profession in the State.

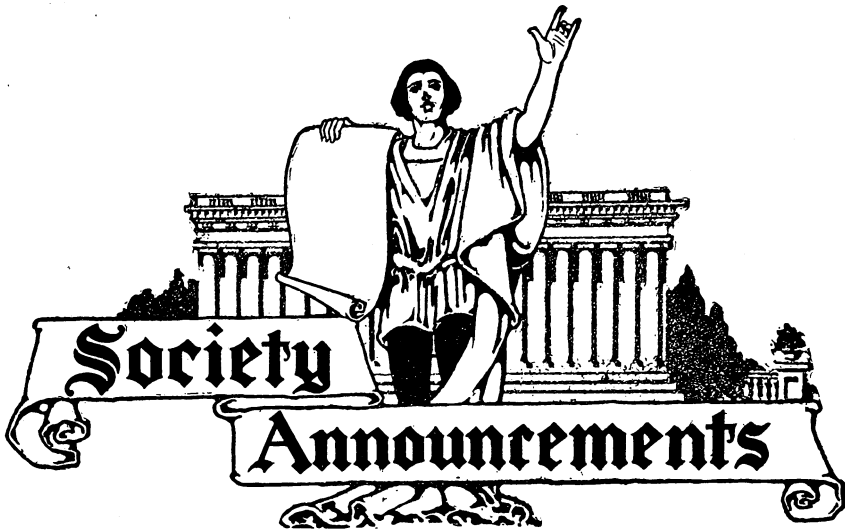
He was at one time offered the chair in the University of Michigan, but declined because of the exactions of his practice. He was President of the Grand Rapids Dental Society for two years and of the Michigan State Dental Society for two years. Several years ago the name of the Grand Rapids Dental Society was changed, and it is now known as the E. S. Holmes Dental Club.

Until his last illness he enjoyed wonderful robust health. His mind was alert and he kept himself informed in all matters relating to natural science.

He was connected with a number of important institutions in Michigan. He was a founder and for many years President of the Kent Scientific Institution, which afterwards became known as the Kent Scientific Museum.

He is survived by one daughter, Miss Jennie W. Holmes and two nieces, Miss Elizabeth A. Holmes and Mrs. L. C. Remington.





National Society Meetings.

PANAMA-PACIFIC DENTAL CONGRESS, San Francisco, Cal., August 30 to September 9, 1915.

Secretary, Dr. Arthur M. Flood, 240 Stockton St., San Francisco, Cal.

State Society Meetings.

ALABAMA DENTAL ASSOCIATION, Montgomery, Ala., April 13, 1915.

Secretary, Dr. J. A. Blue, Birmingham, Ala.

ARIZONA STATE DENTAL SOCIETY, date and place will be announced later.

Secretary, Dr. J. L. O'Connell, Phoenix, Arizona.

ARKANSAS STATE DENTAL ASSOCIATION, Little Rock, Ark., May 13-15, 1915.

Secretary, Dr. W. B. Dormon, Nashville, Ark.

COLORADO STATE DENTAL ASSOCIATION, June 17, 18, 19, 1915.

Secretary, Dr. Earl W. Spencer, 119-120 Pope Block, Pueblo, Colo.

CONNECTICUT STATE DENTAL ASSOCIATION, Hartford, Conn., April 20-22, 1915.

Secretary, Dr. E. R. Bryant, New Haven, Conn.

FLORIDA STATE DENTAL SOCIETY, date and place will be announced later.

Secretary, Dr. Alice P. Butler, Gainesville, Fla.

GEORGIA STATE DENTAL ASSOCIATION, Atlanta, Ga., June 17-19, 1915.

Secretary, Dr. M. M. Forbes, 803 Candler Bldg., Atlanta, Ga.



- ILLINOIS STATE DENTAL SOCIETY, Peoria, Ill., May 11-14, 1915.
Secretary, Dr. Henry L. Whipple, Quincy, Ill.
- INDIANA STATE DENTAL ASSOCIATION, Indianapolis, Ind., May 18-20, 1915.
Secretary, Dr. A. R. Ross, Lafayette, Ind.
- IOWA STATE DENTAL SOCIETY, Waterloo, Ia., May 4-6, 1915.
Secretary, Dr. C. M. Kennedy, Des Moines, Iowa.
- KANSAS STATE DENTAL ASSOCIATION, Topeka, Kans., May 25-27, 1915.
Secretary, Dr. A. L. Benton, Garnett, Kansas.
- KENTUCKY STATE DENTAL ASSOCIATION, Ashland, Ky., June 8-10, 1915.
Secretary, Dr. Chas. R. Shacklette, The Atherton Bldg., Louisville, Ky.
- LOUISIANA STATE DENTAL SOCIETY, Grunewald Hotel, New Orleans, La., June 3-5, 1915.
Secretary, Dr. P. Trowbride, Franklin, La.
- MAINE DENTAL SOCIETY, Portland, Me., June 28-30, 1915.
Secretary, Dr. I. E. Pendleton, Lewiston, Me.
- MARYLAND STATE DENTAL ASSOCIATION, Baltimore, Md., June 11-12, 1915.
Secretary, Dr. F. F. Drew, 701 N. Howard St., Baltimore, Md.
- MASSACHUSETTS DENTAL SOCIETY, Boston, Mass., May 5-7, 1915.
Secretary, Dr. A. H. St. C. Chase, Everett, Mass.
- MINNESOTA STATE DENTAL ASSOCIATION, date and place will be announced later.
Secretary, Dr. Max E. Ernst, 614 Lowry Bldg., St. Paul, Minn.
- MISSISSIPPI DENTAL ASSOCIATION, Jackson, Miss., April 20-22, 1915.
Secretary, Dr. M. B. Varnado, Osyka, Miss.
- MISSOURI STATE DENTAL ASSOCIATION, Golden Jubilee Meeting, Jefferson City, June 10-12, 1915.
Secretary, Dr. S. C. A. Rubey, New York Life Bldg., Kansas City, Mo.
- MONTANA STATE DENTAL SOCIETY, date and place will be announced later.
Secretary, Dr. F. W. Adams, Chicago Block, Billings, Montana.
- NEBRASKA STATE DENTAL SOCIETY, Omaha, Nebraska, May 18-20, 1915.
Secretary, Dr. H. J. Porter, Cambridge, Nebr.
- NEW HAMPSHIRE STATE DENTAL SOCIETY, Weirs, N. H., June 22-24, 1915.
Secretary, Dr. Louis I. Moulton, 15 No. Main St., Concord, N. H.



- NEW JERSEY STATE DENTAL SOCIETY, Asbury Park, July 21-24, 1915.
Secretary, Dr. John C. Forsyth, 430 E. State St., Trenton, N. J.
- NEW MEXICO STATE DENTAL SOCIETY, Albuquerque, N. M., date will
be announced later.
Secretary, Dr. J. J. Clarke, Artesia, N. M.
- NEW YORK STATE DENTAL SOCIETY, Albany, N. Y., May 13-15, 1915.
Secretary, Dr. A. P. Burkhart, 52 Genesee St., Auburn N. Y.
- NORTH CAROLINA DENTAL SOCIETY, Wrightsville Beach, N. C., June 23-
25, 1915.
Secretary, Dr. R. M. Squires, Wake Forest, N. C.
- NORTH DAKOTA STATE DENTAL SOCIETY, Fargo, N. D., May 11-12, 1915.
- OHIO STATE DENTAL SOCIETY, Columbus, Ohio, December 7-9, 1915.
Secretary, Dr. F. R. Chapman, 305 Schultz Bldg., Columbus, Ohio.
- PENNSYLVANIA STATE DENTAL SOCIETY, Reading, Pa., June 22-24, 1915.
Secretary, Dr. L. M. Weaver, Philadelphia, Pa.
- SOUTH CAROLINA STATE DENTAL ASSOCIATION, Columbia, S. C., April
27-30, 1915.
Secretary, Dr. Ernest C. Dye, Greenville, S. C.
- TENNESSEE STATE DENTAL ASSOCIATION, Sewanee, Tenn., June 24-26,
1915.
Secretary, Dr. C. Osborn Rhea, 625½ Church St., Nashville, Tenn.
- TEXAS STATE DENTAL ASSOCIATION, Galveston, Texas, May 19-22, 1915.
Secretary, Dr. W. O. Talbot, Fort Worth, Texas.
- UTAH STATE DENTAL SOCIETY will meet in San Francisco, Cal., during
the Panama-Pacific Dental Congress in August, 1915.
Secretary, Dr. E. C. Fairweather, Boston Bldg., Salt Lake City, Utah.
- VERMONT STATE DENTAL SOCIETY, May 19-21, 1915.
Secretary, Dr. P. M. Williams, Rutland, Vt.
- VIRGINIA STATE DENTAL ASSOCIATION, Richmond, Va., Nov. 4-6, 1915.
Secretary, Dr. C. B. Gifford, Norfolk, Va.
- W. VIRGINIA STATE DENTAL SOCIETY, Wheeling, W. Va., April 14-16,
1915.
Secretary, Dr. J. W. Parsons, Huntington, W. Va.
- WISCONSIN STATE DENTAL SOCIETY, Oconomowoc, Wis., July 13-15, 1915.
Secretary, Dr. O. G. Krause, 1209 Wells Bldg., Milwaukee, Wis.

Ontario Dental Society.

A meeting of the Ontario Dental Society will be held on May 10 to
12, 1915.

DR. W. A. BLACK, Secretary.
480 Spadina Avenue, Toronto, Ont., Canada.

Fifth District Dental Society of the State of New York.

The Fifth District Dental Society of the State of New York will hold its annual meeting at Hotel Utica, Utica, N. Y., April 9 and 10, 1915.

A. C. HITZELBERGER, Secretary,
14 Hopper Street, Utica, N. Y.

J. N. GARLINGHOUSE, President.

Maryland Board of Dental Examiners.

The Maryland Board of Dental Examiners will meet for examination of candidates for certificates May 27 and 28, 1915, at the Dental Department of the University of Maryland, Baltimore, at 9 A. M.. For application blanks and further information apply to

F. F. DREW, Secretary.

701 N. Howard Street, Baltimore, Md.

Maine Board of Dental Examiners.

There will be a meeting of the Maine Board of Dental Examiners at the State House, Augusta, Me., on July 1, 2 and 3, 1915.

DR. I. E. PENDLETON, Secretary.

Lewiston, Me.

Wisconsin State Board of Dental Examiners.

The Wisconsin State Board of Dental Examiners will convene in Milwaukee at Marquette University on June 21, 1915, at 2 P. M., for examination of applicants to practice in Wisconsin.

High school diploma, application and \$25 fee to be filed with the secretary ten days prior to above date.

Dental diploma to be presented in advance of the examination.

Junior dental students presenting a clear card for two years' unconditional work from a reputable dental college, and filing a high school diploma, or its full equivalent, will be permitted to participate in the theory examination in the following six major subjects: Anatomy, Physiology, Histology, Chemistry, Bacteriology, Materia Medica. Satisfactory grades made in these subjects will be credited at subsequent examinations.

Special application blanks for this examination and \$10 fee, together with high school credits, to be filed ten days in advance.

W. T. HARDY, Secretary,
1404 Majestic Bldg., Milwaukee, Wis.

S. H. CHASE, President.



South Carolina State Dental Association.

The annual meeting of the South Carolina State Dental Association will be held at the Jefferson Hotel, Columbia, S. C., April 27 to 30, 1915.

Special public session devoted to the relationship of defective teeth to the public health.

E. C. DYE, Secretary,
Greenville, S. C.

P. D. BROOKER, President,
501 Palmetto Bldg.,
Columbia, S. C.

The Northern Ohio Dental Association.

The annual convention of the Northern Ohio Dental Association will be held in Cleveland, June 3, 4, 5, 1915.

C. D. PECK, Secretary,
Graham Bldg., Sandusky, Ohio.

WESTON A. PRICE, President.

Georgia State Dental Association.

The forty-sixth annual meeting of the Georgia State Dental Association will be held in Atlanta, Ga., at the Piedmont Hotel, June 17, 18 and 19, 1915, beginning at 11 A. M., Thursday, June 17th. We have every assurance that this will be an interesting meeting.

Every ethical dentist in Georgia is respectfully invited to attend and become a member of this organization. Also a most cordial invitation is extended to members of other associations to meet with us.

For further information address

M. M. FORBES, Secretary.

803-4 Candler Bldg., Atlanta, Ga.

Texas State Board of Dental Examiners.

The next regular meeting of the Texas State Board of of Dental Examiners for the examination of applicants for license to practice dentistry in the State of Texas will be held in the High School Building, Dallas, Texas, beginning June 21, 1915, at 9 o'clock A. M.

No interchange of licenses with other States.

No diplomas recognized.

Rules governing examinations and official application blanks will be sent upon request.

All parties desiring to take this examination should send their ap-



plication, accompanied by fee of \$25, to the secretary not later than June 15th. For further information address

C. M. McCauley, Secretary.

434 Wilson Bldg., Dallas, Texas.

Virginia State Board of Dental Examiners.

The regular annual meeting of the Virginia State Board of Dental Examiners, for the examination of applicants to practice dentistry in the State of Virginia, will be held in the city of Richmond, Virginia, June 8, 1915, commencing at 9 A. M. For further particulars apply to

DR. J. P. STIFF, Secretary.

Fredericksburg, Va.

Michigan State Board of Dental Examiners.

The next regular meeting of the Michigan State Board of Dental Examiners, for the examination of applicants who wish to practice dentistry in Michigan, will be held in the Dental College at Ann Arbor, beginning Monday, June 14, 1915, at 8 A. M., and continue through Saturday, June 19.

For application blanks and full information apply to

A. W. HAIDLE, Secretary.

Negaunee, Michigan.

The Kansas State Dental Association.

The next annual meeting of the Kansas State Dental Association will be held in Topeka, May 25th, 26th and 27th. This change in dates was made necessary in order to accommodate some of the essayists secured.

DR. A. L. BENTON, Secretary.

Garnett, Kansas.